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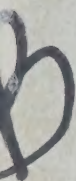


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JOURNAL



▲ Esthetic dentistry

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Published monthly by the Canadian Dental Association at 1815 Alta Vista Drive, Ottawa, Ont. K1G 3Y6. Copyright 1982 by the Canadian Dental Association. Authorized as Second Class Mail Registration Number 5384. Postage paid at Ottawa.

Notice of change of address should be received before the 10th of the month, to become effective the following month.

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada - \$42; United States - \$44; all other - \$46. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted to the Journal.

ISSN0709 8936

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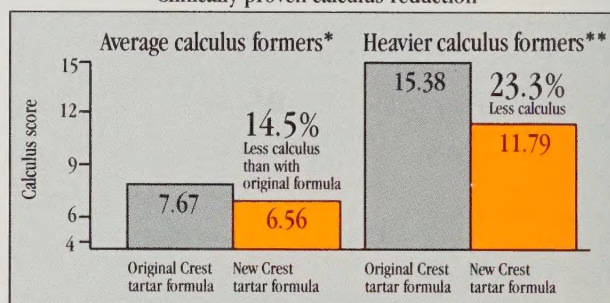
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References: 1. Lu, K.H. et al., J Indiana Dent Assoc, 1988, March-April. 2. Lu, K.H. et al., J Dent Child, 1985, Nov.-Dec., pp. 449-51.

Clinically proven calculus reduction



*Whole mouth V-M Scores ≥ 7 .

**Whole mouth V-M Scores ≥ 12 .

Chart adapted from Lu et al.¹

Mean scores significantly different from one another at $\alpha = 0.05$.

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JOURNAL

Canadian
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Canadienne

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New beginnings

“**P**riority-setting exercise”: highly impressive terminology for a CDA conclave. But then it was a very vital activity. Late in October, about 150 kilometres from CDA headquarters, 17 members of Management Committee, Executive Council and senior support staff, cloistered in retreat, spent long hours during a three-day period, in planning sessions.

It was an appropriate time on the calendar to set our sights for the New Year; to develop a course of action for the Canadian Dental Association that would be most meaningful for each of its members; to every dentist in this country and to the Canadian public to warrant their continued trust in our care.

Such a task is never an easy one. But we knew that before the sessions commenced.

Each of the CDA officials and support staff people had been asked to come to the meeting with a prepared list of priorities. These were fed into the facilitator's sieve. The most important were retained at the top. None was naive enough to believe that any organization could solve all its problems or achieve all its goals. Certainly the CDA leaders were able to address those issues they believed would be most meaningful in 1989. That is what “priority-setting” is all about.

Communication emerged as a paramount issue among the major priorities. (And we would have expected this). The message became clear! We must mount much more effective programs to explain the mission of the Association, proclaim the purpose of the profession, articulate the image of the dentist and enhance public awareness.

Staff members were directed to prepare a new communications strategy, an entirely new approach and philosophy if necessary; ready for consideration and implementation at the January meeting of the Executive Council.

Intrinsically implicated with communications are the priorities of Third Party involvement, and Membership Services. The dentists of Canada expect their National Association to take a leadership role to combat any alternate dental plan that denies our patients both the freedom to choose their dentist and the type of treatment. Tell patients, tell employers, tell employees — tell everyone — Capitation denies a basic Canadian right. The involvement of Dialogue in Dentistry would make the Canadian practitioner much more aware of the pitfalls in Capitation and educate the public and employers in the merits of fee-for-service dentistry.

The dentist/patient ratio related to the demands for services is now on every planning agenda. Three years ago, at a national symposium, dentists assigned the Canadian Dental Association the responsibility to monitor and influence the phenomenon resulting from dentistry's own successes — the over-supply of dentists. As a result of consultations with deans in recent years, enrolment has already been decreased in our 10 Canadian faculties. Intensive studies are continuing to ensure that all the latest trends and data affecting the future supply of services are readily available. On this basis, your Association is in a position to react without delay to put remedial measures into effect.

There's a familiar phrase that circulates at every CDA meeting (particularly a priority-setting exercise) — “it's about the money!”. It is of little avail to consider lofty ideals and plans if the wherewithal to realize them does not exist. Since the first of the ‘modern era’ planning sessions was held in 1984, strict strategic budgetary mechanisms have been established to guarantee that not only the most important programs receive priority funding, but that every other membership service receives adequate resources, all within generated revenue. It isn't an easy process, but ever so carefully, the allocation of funds to each Association endeavor is scrutinized. The proper balance must be maintained.

CDA planners prepare and propose on the basis that the general membership fee has entrusted them with the responsibility to obtain the best value for the dollars spent. This is where the dentists across the country have a role to play. So much depends upon them informing their representatives at CDA as to what they consider important. (It's that word “communication” again.)

It is the time for new beginnings. The New Year invites all of us to be more vital, more dynamic. The entire membership is invited to get involved in the ongoing CDA activities. Make it your personal resolution to contact a CDA representative soon; express an opinion, contribute an idea, make known an apprehension. The more involved we are, the more meaningful is the entire “priority-setting exercise”.

*Jack W. Niedermayer, BA, DDS,
President of the Canadian Dental Association*

Dentistry:

A profession and a science

Man has been afflicted with the ravages of dental disease since the dawn of time. The world had to wait however until 1723 for Pierre Fauchard to publish his epic work, 'Le chirurgien dentiste, ou, traite des dents (The Surgeon-Dentist, or, Treatise on the Teeth), before dentistry was to step into the realm of a science.

Another 100 years was to pass, well into the middle of the 19th century, before the foundations of professionalism and scientific endeavor began to be established. Since then, evolving through the diligence of dedicated men and women, dentistry has earned the distinction of being both an autonomous profession and an applied science.

The Journal of the Canadian Dental Association was conceived to reflect precisely these two dimensions — professionalism and scientific endeavor. Nowhere is it better enunciated than in the 1935 first edition of this Journal, by the founding editor, Dr. M.H. Garvin:

Our Journal stands at the door, ready to assist in this task, ready to broadcast throughout the Canadian profession an accomplishment in any one section of the profession, ready to bridge the gap between professional achievement and the public need. It aspires, through our dental leaders, to mould the thought of the profession, to guide its hopes and clarify its problems, supporting all things which elevate and inspire. It will glean from every section of the land, every phase of dental life, in order to spur us on to greater endeavors. The Journal hopes to speak for our Association and to be its official organ, serving as a mirror of dental life in Canada and at the same time being a journal of constructive opinion, fighting in season and out of season for the highest and noblest principles.

Pierre Fauchard in 1723 had set the stage. With a solitary decision he decreed that dental knowledge shall not be jealously kept secret for private profit, but shared for the benefit of all. The Journal in 1935 continued that sharing task and now, in 1989, more than ever before, our Journal is the symbol of quality dentistry in Canada.

The Scientific section of this Journal is reserved only for those scientific articles that meet certain rigorous criteria. They must be original articles, preferably but not necessarily by Canadian authors; (hopefully to encourage our Canadian dental scientists and researchers to become more involved with publishing their achievements).

As the official publication of the National Association, it is understandable that the greatest majority of readers are general practitioners. For this reason an attempt is made to orient the articles with a clinical bias. But the editors never lose sight that the Journal's credibility will only be maintained with a proper clinical/basic science ratio.

Before being accepted for publication each article must undergo strict scrutiny. The scientific editors routinely distribute submitted manuscripts to independent referees who represent the various dental specialties. Their task is to carefully review all aspects of every article for quality, accuracy and appropriateness. This entire process, present in all quality scientific publications, gives the Journal of the Canadian Dental Association the distinction of being the only refereed national dental publication produced in Canada.

In scientific circles, dental journals are classified as low or high impact publications, depending upon how often they are cited by dental researchers: i.e., a certain core number of journals is selected as a baseline and a record kept as to how many times one particular journal is cited within the core.

Reference to the process, 'Journal Citation Studies, the Literature of Dental Science vs. the Literature Used by Dental Researchers', offers evidence that the Journal of the Canadian Dental Association is listed among those journals, (dental and non-dental), that are most cited within the core.

The Publications Committee, the Journal editors and staff, are proud of our Journal. Collectively they devote a great deal of time, energy, and effort to ensure that it remains a professional, scientific and prestigious publication.

*Pierre C. Desautels, DDS, MS
Scientific Editor (French language)
Journal of the Canadian Dental Association*

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted.

Convention attendance record broken at FDI/ADA combined meeting

Attendance at the American Dental Association/Fédération Dentaire Internationale World Dental Congress in Washington, D.C. broke the record for attendance at a convention of any kind ever held in the U.S. Capital.

The total attendance figure was 30,618. Those registered from destinations outside the United States numbered 5,106 and of that number 3,055 were dentists.

The vast Congress was described by outgoing FDI President Dr. Carlton H. Williams and ADA President Dr. James A. Saddoris, as "probably the greatest dental meeting ever held."

'Dentistry: Caring for the World'

The theme of the historic session was "Dentistry: Caring for the World" — reflecting the professional commonality that dentists from all over the world share.

The meetings and scientific sessions were held at the Washington Convention Center and many major hotels.

Presidential greeting

In a videotaped message of greeting to participants at the opening of the Congress, United States President Ronald Reagan commended the dental profession, particularly for its role in helping to combat AIDS. An international AIDS symposium was one of the highlights of the scientific program at the Joint Congress.

FDI portion of meeting

During the FDI portion of the joint Congress, Canada was represented at the General Assembly by the FDI Treasurer, Dr. William R. Thompson, three official delegates — Dr. Robert N. Hicks (National Treasurer, Canada), Dr. Jack Niedermayer, CDA President, Dr. George Beagrie, and two alternate delegates — Dr. James Wright and Dr. Ralph Barolet. CDA's Executive Director, Mr. Jardine Neilson, was also in attendance.

Canadians participated

Canadians who participated in FDI commissions throughout the year, as consultants or participants are as follows:

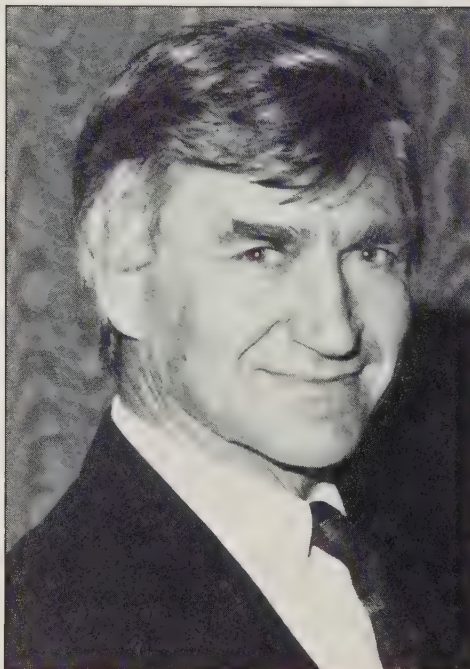
Commission on Oral Health, Research and Epidemiology

Dr. William R. Bedford — leader of the Standing Committee of Chief Dental Officers.

Dr. John Hardie
Dr. Daniel Kandelman
Dr. Michael MacEntee

Commission on Dental Education and Practice

Dr. George S. Beagrie
Dr. Ernest R. Ambrose
Dr. Marcia Boyd
Dr. R.B. Gilliland
Dr. Michael MacEntee
Dr. G. Kravis
Dr. David Donaldson



Dr. George S. Beagrie of the University of British Columbia was honored for his contribution to FDI scientific activities. He received the FDI Merit Award during the Congress.

Commission on Dental Products

Dr. Ralph Barolet
Dr. C. Torneck
Dr. J.H. Bridges
Dr. F. Pulver
Dr. J.G.L. Lovas

Commission on Defence Forces Dental Services

Brigadier General James N. Wright
Brigadier General J.F. Begin
Brigadier General William R. Thompson

Extensive scientific program

The ADA/FDI scientific program was extensive, involving clinicians and table clinics from a wide range of countries.

Canadians who participated in the scientific program were:

Dr. George S. Beagrie
"Improving Access to Oral Health Care"

Dr. A.R. Ten Cate
"Tissue Integrated Protheses in Oral and Maxillofacial Reconstruction"

Dr. Ron Jordan
"Esthetic Composite Bonding Materials and Techniques"

Dr. Charles Munroe
"Treating the Disabled Patient in Your Dental Practice"

Dr. George Zarb
"Osseointegrated Dental Implants: A New Era for Protheses"

Business sessions

The major business activities of FDI took place in four main working sessions; i.e. General Assembly A, General Assembly B, the National Treasurers' Meeting and the Open Question Period. Following is a brief summary of the main items of interest from General Assembly A and General Assembly B.



Leaders of the FDI posed together at the momentous FDI/ADA joint meeting in Washington, D.C. From the left are: President-Elect Dr. Ruperto Gonzalez Giralda, of Spain; FDI President Dr. Carlton H. Williams of the United States, and FDI Treasurer Dr. William R. Thompson, of Canada.



Listening carefully to FDI Commission reports at the joint FDI/ADA Congress in Washington D.C. are, from the left: Dr. James N. Wright, CDA President Dr. Jack Niedermayer and Dr. Robert N. Hicks, FDI National Treasurer, Canada.

1. Annual World Dental Congress Sites:

In 1989, the FDI Congress will be held in Amsterdam, the Netherlands. The Netherlands is a small country but one with many historical and culturally interesting features. Amsterdam is one of the most attractive cities of Western Europe: "the smallest big city in the World".

The dates for the Amsterdam Congress are September 2 to 8, 1989.

The schedule of future FDI Congress meetings is as follows:

1990	Singapore (Sept. 8-14)
1991	Milan, Italy (Oct. 7-13)
1992	Berlin, West Germany
1993	Gothenburg, Sweden
1994	Vancouver, Canada
1995	Hong Kong

2. Revisions to the Constitution

The FDI established a task force to study its structure and function. Considerable discussion took place on many of the proposals, while a number of alternations to the Constitution of the FDI occurred. No major changes to the organization resulted.

One of the areas of most interest to Canada was the change to the subscription formula (which establishes the amount of money each country must pay annually to maintain its membership in the FDI). A modified formula now reduces

the effect of the gross national product per capita on the subscription amount. This new formula will reduce Canada's financial contribution.

3. Finances

The accounts for 1987 revealed an excess of \$230,305. The income was \$1,008,200 and expenditures totalled \$779,915. This excess of revenue was the result of two consecutive successful FDI Congresses, in Manila and Buenos Aires.

The General Assembly approved an increase in the annual International Dental Journal fee, from \$30 to \$35. However, no change was made for the supporting membership subscription.

It was decided to have the Council of the FDI meet twice a year instead of once. This, along with increased headquarters expenses, will result in an excess of expenditures over income of approximately \$45,000.

4. Technical Reports

The following technical reports were presented to the General Assembly, and were approved.

- The Relationship between the Dental Profession and Third Party Carriers.
- Recommendations in Radiographic Procedures.
- Premedication in Dentistry.
- Recommendations for a Compendium of Instruments and Expendable Materials to be Used for Dental Emergency Treat-

ment outside of Dental Facilities during Mobile Missions.

- Regulation of Dental Materials.
- Good Manufacturing Practices.

Canadian honored

Professor George S. Beagrie of the University of British Columbia received the FDI Merit Award for his contribution to FDI scientific activities, including chairmanship of both the Commission on Dental Education and Practice and the Committee on Commissions.

Another Canadian who gained distinction at the Congress was Brigadier General James N. Wright of Winnipeg, who is now Chairman of the Commission on Defence Forces Dental Services.

Now 79 member countries

Three new national member organizations were admitted to the FDI as members during the Washington Congress. This brings the total to 86 member dental organizations in 79 countries of the world. The new members were the Associazione Italiana d'Odontoiatri (Italy), the Bahrain Dental Association and the Colegio de Cirujanos Dentistas de Costa Rica. Δ

Most of the foregoing was reported by Dr. Robert N. Hicks, National Treasurer, Canada. He has prepared a detailed report of the Congress for the Interim meeting of the Board of Governors of the CDA, March 31, April 1, 1989.

Canadian dentist nominated by FDI

Dr. W.R. (Bill) Bedford, Senior Consultant-Dentistry, Medical Services Branch, Health and Welfare Canada, has been nominated as Leader of the Conference of Chief Dental Officers at the October meeting in Washington D.C. of Fédération Dentaire Internationale.

The roles of government Chief Dental Officers are to (1) interpret the significance of trends about the public's oral

health status and dental research, education and practice to the government and (2), represent government to the dental profession so that both government and organized dentistry cooperatively serve the public by the most effective, efficient and socially accepted means possible.

Chief Dental Officers meet annually at FDI meetings to gain information and share experience to evaluate and coor-

dinate their government's oral health policies and strategies with those of the FDI and WHO, and to enrich their range of choices for organizing oral health services within their own countries.

One of the roles of the Leader involves the responsibility for planning of the discussion programme for future Conferences which are held under the auspices of the FDI Commission on Oral Health, Research and Epidemiology, in collaboration with the Oral Health Unit of WHO. The next Conference will take place in Amsterdam, The Netherlands, during the FDI meeting in early September 1989.

Dr. Bedford has had particular interest and activity in assisting developing countries in the training and utilization of Dental Therapists. Canada's success in the delivery of dental services to northern remote areas has a world-wide reputation and has attracted particular attention from such countries as Mozambique and the Dominican Republic. These developing areas have looked to Canada for assistance in the training of dental per-

SLSA

Your continuing education made easy Self-learning/self-assessment program (SLSA)

A dentist, upon receipt of a license to practise, makes a commitment to keep knowledge and skills current. To determine whether knowledge and skills are current can be a difficult task because of the speed by which knowledge is expanding. The information overload facing the practising dentist is very real. Dentists require a mechanism both for establishing their respective levels of competence and for maintaining them after graduation.

Traditional forms of continuing education have consisted of attendance at conventions, lectures, study clubs etc. It is recognized that all of these have certain limitations. The SLSA Program is not intended to replace any existing continuing education programs but rather to be complementary to them.

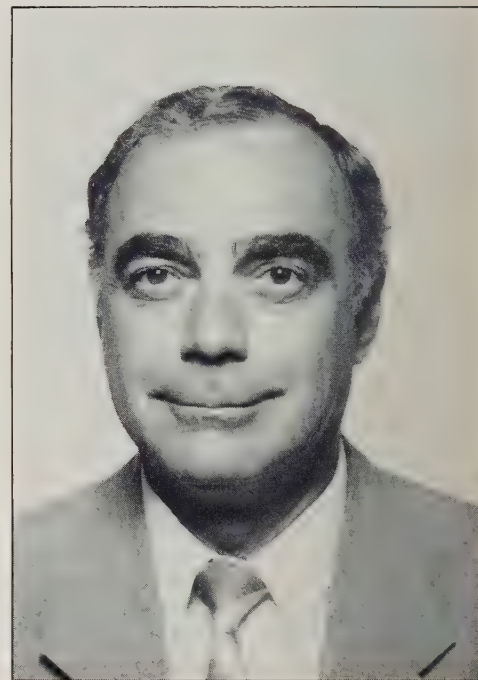
Self-assessment approaches to competence assurance have several advantages. The professional can identify strengths and weaknesses without risking exposure to colleagues and possible humiliation and can then seek out remedial programs, improve upon individual deficiencies, or add to existing strengths. In addition, the self-assessment program provides the added convenience of being able to work at home, in the office or wherever one chooses, at one's own speed and to utilize reference material.

The Canadian Dental Association, by continuing to sponsor the program, is underscoring its importance. This is in keeping with the recommendations of the Canadian Dental Association's Symposium on Continuing Education held in 1972.

The National Dental Examining Board of Canada has taken the initiative to make the SLSA program available for practitioners in Canada in 1989. The four Western Provinces have already awarded continuing education credits for the program.

As general practitioners in Canada, SLSA is your program. Your national association urges you to participate.

The cost for Parts I & II of the program is \$215. and it is fully tax deductible for self-employed professionals. You will find further information in this Journal on how to apply for the SLSA program. △



Dr. W.R. Bedford

sonnel and for experience utilizing the specially developed Canadian portal equipment.

Dr. Bedford, who resides in Ottawa, has been the federal Senior Consultant — Dentistry since December, 1981, and has also served as a member of the Board of Governors of the Canadian Dental Association throughout that time. △

Vancouver 1989: Convention Countdown!!!



Dr. Michel Jahjah,
Convention General
Chairman

EDMONTON: To the 4,000 people who attended the 1988 CDA convention, this city will no longer just be remembered as the capital of Alberta . . . but also as the setting for one of the most successful meetings held by CDA! The ample

coverage, in the November issue of the Journal, will have created a landslide of pleasant memories for those who joined us, but will also have given to those who were absent the opportunity to "see for themselves" what Edmonton was all about.

Before proceeding any further, our most heartfelt compliments to our Alberta colleagues for their creativity, enthusiasm and organizational skills in producing an event that spelled success from the outset. Thank you, Albertans, for your contribution to the dental profession and your warm Western hospitality!

Although this Journal covered all the details of the Convention in November, I would like to add that the social, spouses and children's programs in Edmonton were the most entertaining I have ever witnessed. But then, August means vacation-time and vacations are a family affair!

We often ask ourselves what the future holds for our profession. Survival, for some of us, and increased growth for the rest of us will depend on the acquisition of new information. Has your knowledge of AIDS, infection control, practice management, endodontics, to mention but a few, increased as rapidly as the disclosure of information on these subjects?

For the many people I have talked to, a convention is the best place to gather a wealth of information in a micro span of time. In fact, that is the "raison d'être" of a convention. It is comparable to visiting a car assembly line and leaving in a new vehicle, fully prepared to tackle any unforeseen circumstances on the road!

The latest techniques, dental materials and equipment, the development of human relations and the discovery of things we never knew existed are your

new assets. Dentistry is advancing by leaps and bounds and those who are unable to keep up with its pace will be left behind.

CDA's objective is to place the information into your hands by organizing a convention that will offer you the best speakers to address the important issues affecting your practice, and show you new products and services. In fact, even the most "habitué" participants of CDA conventions will be surprised by the quality and number of exhibits being planned. Exhibitions are by far the best marketplace to compare chairs, stools, handpieces and everything else the dental industry has to offer!

All this will be within your reach at the Trade & Convention Centre, in beautiful Vancouver, from August 27th to 30th. And, since August is a vacation month, why not take advantage of the spectacular surroundings and bring your family? Mountain lovers will be impressed by the mighty Rocky Mountains that frame the city of Vancouver. If you are an ocean lover, you will be just as impressed by the sandy beaches located only minutes away from the downtown area! This wonderful city combines the pleasures of both!

We'll all be there — in Vancouver. Won't you join us? △

Formula for Satisfaction!!

ATTENDING THE 1989 CDA CONVENTION IN VANCOUVER — SATISFYING YOUR QUEST FOR KNOWLEDGE

Explore new technologies and techniques

- Esthetic composite bonding — how to make informed choices on new materials.
- What's new in the dental marketplace?
- How to guarantee patient satisfaction with interim restoration.
- Risk Management: what does it really mean?
- How to bring back excitement into dentistry . . . and your marriage.
- How to produce tooth-coloured inlays in 45 minutes — without impression.
- How to diminish the stress and enjoy your profession?
- Are dental computers feasible? How to systematically compare computer systems and vendors?
- How to make your prevention program work profitably?
- What are the 7 steps to ensure staff satisfaction?
- How can clinical techniques provide predictable results with direct restorative materials?
- What impact will lasers have on dentistry in the near future?
- What are the 10 commandments of communication?
- How to make temporization the blueprint for success in crown and bridge?
- How to change a "difficult" patient into an ambassador for your practice?
- Dentin bonding materials: resin-enamel bonding vs. resin dentin bonding — how to make the right choice.
- How to work smarter and not harder?

**For answers to all those problems, plan to attend the
1989 CDA Convention in Vancouver!
August 27th to 30th**

Vancouver — spectacular attractions for enjoyment of the whole family



Vancouver's "Chinatown", the second largest Chinatown on the continent



Totem poles in Stanley Park, Vancouver

Man has created some of the charm of the City of Vancouver and environs, but Nature has enhanced it to a much greater degree with a spectacular backdrop.

This city, with a wide-ranging array of attractions for the whole family, is Canada's third largest metropolis.

Talented and dedicated people are developing a program to match the environment in enjoyment and interest, at the annual Convention of the Canadian Dental Association, which will be held in the ultra modern Vancouver Trade and Convention Centre from **August 27 to August 30**.

City fathers with a sense of history have preserved some quaint evidence of the city's rowdy, rollicking and rustic past, but Vancouver is now a centre of urban sophistication, with world-class hotels, gastronomical delights in a wide variety of dining experiences, extensive shopping facilities, theatres, art galleries, museums, universities, recreation facilities and beautiful parklands — all set against a breathtaking backdrop of towering mountains.

Some city attractions

In the middle of the lush, green and beautiful 405 hectares called Stanley Park (right next to downtown Vancouver) is an attraction that is a thrill for kids of all ages — the Vancouver Aquarium, where killer whales leap and frolic in their

2.5 million gallon habitat. The Aquarium features more than 8,000 aquatic animals, with several daily shows.

Moving on downtown, the family, or any part of it, can enjoy the hands-on, high tech displays at the Arts, Sciences and Technology Centre, or the nearby Beatles Museum. Also, next to the police station, the Vancouver Police Centennial Museum displays more than 100 years of history and intrigue. And then there is the University of British Columbia's M.Y. Williams Geology Museum of dinosaurs, minerals and other natural wonders created during this planet's 4.5 billion years of evolution.

Entertainment

Vancouver's stages offer a scintillating variety for all entertainment tastes, whether musicals, dance, drama, concerts and even the irreverent improv humor of Theatre Sports.

To appeal to a different range of senses, there is the Vancouver Art Gallery, housed in Vancouver's former court-house, which in itself is an art treasure, because of its impressive architecture. In the South Granville area one can find gallery after gallery of art and antiques. Robson Street offers the last word in fashion.

When it is time for wining and dining, there is everything from waterfront tables to mountaintop views, and from Afghan to Szechuan.

City of gardens

At the heart of the city's bustling Chinatown, the visitor can pause for a few meditative moments in the Dr. Sun Yat-Sen Classical Chinese Garden. In the Ming Dynasty style, it is the only authentic classical garden created outside China.

The Botanical Gardens at the University of British Columbia includes alpine flora from every continent, a unique pharmaceutical garden of 16th century design, and Nitobe, an authentic Japanese garden. Another that should not be missed is the Bloedel Floral Conservatory. The Capilano Suspension Bridge stretches 137 metres (450 feet) above gardens and waterfalls in its setting of mountains.

History, the sea and the stars

Vancouver's colorful history is displayed in the Vancouver Museum. There one can also see history and art of Native Peoples and decorative art of Asia, Europe and the Americas. Upstairs, one can journey through the galaxies in the H.R. Mac-Millan Planetarium. In the nearby Maritime Museum, the visitor can sail away in the past. There it is possible to tour the historic RCMP vessel, the St. Roch. Here one can get a feeling of how it was in this great natural harbor area in the days before the arrival of white settlers and entrepreneurs.

1989 CDA Convention in Vancouver

Northwest Indian arts

There is a world renowned collection of Northwest Indian arts to see in a display in the University of British Columbia's Museum of Anthropology. From intricately carved jewellery and ceremonial objects of gold, argillite and bone, to huge, eerie totem poles. Other art and artifacts displayed here have been gathered from around the world. The museum itself is considered an architectural masterpiece. Outside, the tourist can walk through a recreated Haida village.

In suburban Richmond, just south of the city, the visitor will find North America's most exquisite example of Chinese palatial architecture. The glittering Buddhist Temple houses artifacts of superlative Chinese workmanship. Take time for a Buddhist tea ceremony.

Area attractions

Vancouver is the departure point for scenic cruises aboard stately steamships, whether to Vancouver Island, Seattle or the Alaska Cruise via the famous "Love Boat" line.

On Vancouver Island, the visitor can enjoy Victoria's old world elegance, including the stately Empress Hotel and the provincial Parliament Building, or travel to view the grandeur and color of the world-famous Butchart Gardens, just north of Victoria.

A short drive from Vancouver brings the visitor to Garibaldi Provincial Park with its glaciers, lava flows and alpine meadows.

Whistler Village with its two huge mountains and a wide range of modern facilities is not only internationally famous as a ski resort. The European style village at the base of the mountains has memorable charm. The resort offers windsurfing, hiking and golfing in summer. Golfers can enjoy their favorite activity on the Arnold Palmer designed 18-hole course.

East of Vancouver is the strikingly beautiful and agriculturally-productive Okanagan Valley. Eleven of the province's 13 wineries are to be found there. Many vineyards boast beautiful hilltop views of the lakes and mountains, and welcome tours. Orchards are abundant throughout this region and fruit can be found at roadside stands in season. More than 650 animals of the world lope and waddle through the sprawling Okanagan Game Farm, south of Penticton.

Pre and post-Convention trips

Because of its convenient West Coast



The Vancouver Planetarium



In a startlingly unique architectural style, Vancouver's Trade and Convention Centre is like a jewel in the midst of Vancouver's busy downtown core.

location, Vancouver is an ideal departure point for pre or post-Convention holidays in such points as Hawaii, San Francisco, Las Vegas or Los Angeles.

It is not too early for dental practitioners and all members of the family to plan a memorable vacation in one of the

most beautiful locales in Canada. For the practitioner, an equally memorable and professionally beneficial program of clinical presentations, a wide array of dental equipment and a high-calibre social program will ensure a highly satisfactory experience. Δ

Dental hygienists supervision statement approved by CDA Board of Governors

At the 1988 annual meeting the Board of Governors of the Canadian Dental Association approved a statement on supervision requirements for dental hygienists.

Background comments stated that the dental profession supports the concept of an oral health care delivery team and the use of dental auxiliaries, within specific parameters, to expand opportunities for patient care and contain costs.

The Canadian Dental Association (CDA) is concerned with standards of oral health care delivery in Canada and recognizes the initiatives of provincial governments and other groups, toward defining and rationalizing the duties of all types of health care workers and their working relationships. This position paper is formulated in an effort to avoid decisions being made that may compromise the quality of patient care. Δ

Supervision Requirements for Dental Hygienists

Important Principles

CDA believes that any definition of the working relationship of the dentist and the dental hygienist, or of supervisory requirements for the latter, must respect the following principles:

- 1.(a) The dentist directs the oral health care delivery team because he or she is prepared and qualified to provide a comprehensive differential diagnosis of oral health status, to plan and render treatment required and to refer patients, as required, to another dentist or physician.
 - (b) Primary oral health assessment requires a comprehensive differential diagnosis and treatment planning.
 - (c) Dental hygiene is one frequently required group of oral therapies that may be indicated by a differential diagnosis.
 - (d) Patient care is enhanced by an effective working relationship between the dentist and the dental hygienist.
 - (e) Comprehensive patient oral health care cannot be achieved if the dental hygienist is an independent practitioner not subject to the supervision of a dentist.
- 2.(a) Dental hygienists licensed by Dental Licensing Authorities should have representation — with full rights and responsibilities, including the right to vote — on the Board of the Dental Licensing Authority.

Practical Arrangements for Supervision of Hygienists

Every patient treated by a hygienist must first have the advantage of current diagnosis and treatment planning by a qualified dentist. The use of the dental hygienist within the oral health care delivery team does not necessarily imply, however, that a dentist has to monitor every aspect of the work of the dental hygienist every time a patient is treated by a hygienist.

On the contrary, growing needs for oral health care, particularly in chronic care institutions, require supervisory arrangements that could permit appropriate scope for the hygienist while respecting the principles noted earlier.

CDA believes that there are two general approaches to supervisory arrangements which may be employed at the discretion of a dentist, as provincial regulations permit, to provide the varying degrees of scope appropriate in various circumstances while ensuring that the dentist is responsible for patient care. These approaches are described below.

While this document outlines two approaches to supervision endorsed and supported by the Canadian Dental Association, at the national level. It does not supersede, replace or affect provincially defined requirements for supervision outlined under the authority of the dental licensing body recognized under provincial legislation.

CATEGORY 1: IMMEDIATE SUPERVISION

Some duties or procedures performed by dental hygienists require supervision by a dentist who is physically present in the office and immediately available.

Definition of IMMEDIATE SUPERVISION

Immediate supervision means that a licensed dentist must:

- (a) Through direct examination of the patient diagnose the condition to be treated.
- (b) Authorize the procedures to be performed.
- (c) Respond in a practical fashion to requests for advice or assistance made by the dental hygienist.
- (d) Review with the dental hygienist patient care provided and determine immediacy of requirement for the next dental examination of the patient.
- (e) Be physically present in the office suite or institutional dental service.

CATEGORY 2: DIRECTION

Certain duties or procedures performed by dental hygienists may not require the dentist to be physically present in the office and immediately available.

For example, in long term care institutions or public health programs involving target groups of patients, a dental hygienist may be employed to carry out specific assigned duties under DIRECTION.

Definition of DIRECTION

Direction means that a licensed dentist must:

- (a) Through direct examination of the patient diagnose the condition to be treated.
- (b) Authorize the procedures to be performed.
- (c) Respond in a practical fashion to requests for advice or assistance made by the dental hygienist.
- (d) Review with the dental hygienist patient care provided and determine immediacy of requirement for the next dental examination of the patient.

Considerations affecting choice of supervisory arrangement

Where provincial regulations permit, dentists may choose to delegate specific duties to dental hygienists under either IMMEDIATE SUPERVISION or DIRECTION while retaining full responsibility for patient care. While some duties of dental hygienists may be performed under DIRECTION rather than IMMEDIATE SUPERVISION, in making the choice of arrangements for supervision, the dentist must recognize that there are a number of factors to be taken into account beyond the consideration that the duties fall within the appropriate category of supervision. Some specific considerations include the following:

1. Seriously ill patients: Patients classified as medically compromised present varying degrees of difficulty or risk with respect to dental care. Medically-compromised patients judged to be at high risk

should receive treatment by a hygienist only under IMMEDIATE SUPERVISION.

2. Range of supervisory responsibilities: The dentist should provide IMMEDIATE SUPERVISION if he or she is accepting responsibility for the work of numerous hygienists who are performing their duties at the same time. Dentists must recognize that the range of supervisory responsibility accepted must be reasonable and that they are accountable for their ability to ensure adequate patient care.
3. Experience of the dental hygienist: A dentist should not permit a dental hygienist to work under DIRECTION until he or she has confidence in the individual dental hygienist and the dental hygienist feels prepared to do so.

Permitted Dental Hygiene procedures may be performed under DIRECTION outside the dental office of the directing dentist provided the conditions outlined in (a) (b) (c) and (d) above have been satisfied, AND the following supplementary condition is unequivocally met:

The dental hygienist is performing the duties within an institution which provides medical services to which the dental patient has ready access (i.e. a physician is immediately available or on call) and the dental patient is under the overall care of a physician cooperating in the provision of the institutional medical services.

Conclusion

Although Dental Hygienists, on the basis of their education, training and expertise cannot be viewed and are not recognized as primary care health workers or providers, they are qualified and recognized as members of the oral health care team providing a limited range of services under the supervision of a dentist. While the appropriate arrangement for supervision (immediate supervision or direction) is a matter of choice, supervision is *always* required and the services rendered by a hygienist are of benefit only within the context of comprehensive oral health care provided by a dentist.



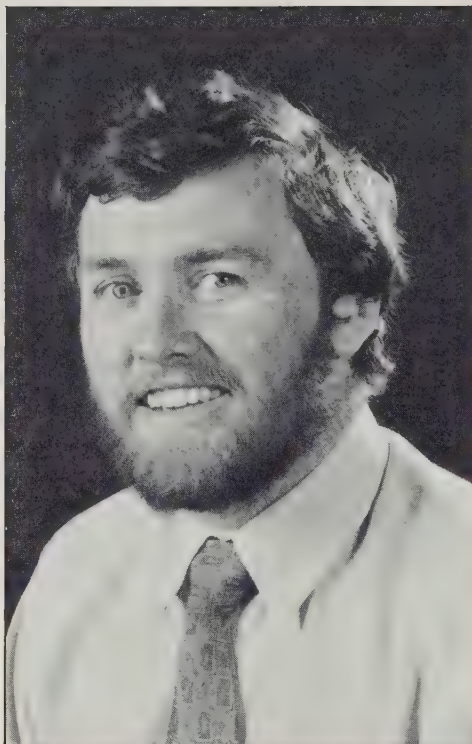
Oh what a feeling!



Royal College elects four new Council members



Dr. C.L.B. Lavelle



Dr. Michael MacEntee



Dr. Gordon W. Thompson

Four Fellows of the Royal College of Dentists of Canada (RCDC) have been elected by acclamation to the Council of the College. They are:

Dr. Christopher Lavelle, Winnipeg *Dental Sciences*;

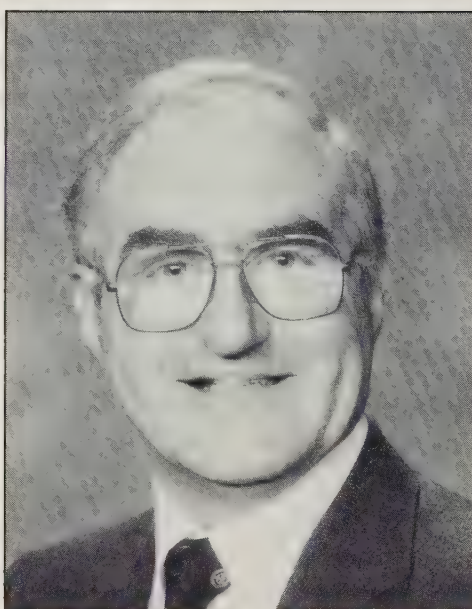
Dr. Michael MacEntee, Vancouver *Prosthodontics*;

Dr. Colin Price, Vancouver *Oral Radiology*;

Dr. Gordon W. Thompson, Edmonton *Dental Public Health*.

Dr. Lavelle is a professor in the Department of Oral Biology, University of Manitoba. After emigrating from England in 1975, he was Chairman of the Department of Oral Biology until 1980, when he spent a year with Dr. Gorlin in Minneapolis. He then returned to Winnipeg to continue his research in craniofacial morphometrics with emphasis on contrasting differences in size from shape. Dr. Lavelle is the author of five books and approximately 200 scientific articles. In addition to the PhD (among other degrees) that he already holds, he has just obtained a second PhD in Management from the University of California.

Dr. MacEntee received his undergraduate dental education in Dublin at the



Dr. Colin Price

Royal College of Surgeons in Ireland, and his prosthodontic training at the Medical University of South Carolina. He joined the Faculty of Dentistry at the University of British Columbia in 1975 and since then has been teaching in the undergraduate prosthodontic program and conducting research on oral health problems among elderly people, and dental materials. He is currently Professor and

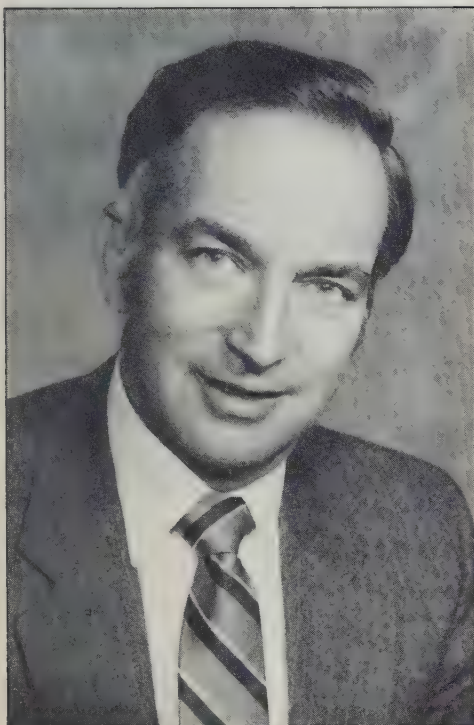
Chairman of the Division of Prosthodontics in the Department of Clinical Dental Sciences at UBC and President of the Association of Prosthodontists of Canada.

Dr. Price is Chairman of the Division of Oral Radiology at the University of British Columbia and Professor in the Department of Oral Medical and Surgical Sciences at that University, where he has taught Radiology since 1977. Dr. Price obtained his dental degree at the University of Birmingham, England, and earned his Fellowship in Dental Surgery in the Royal College of Surgeons of England and his Masters at the Birmingham Dental School. He has examined for the RCDC and is President of the Canadian Academy of Oral Radiology.

Dr. Thompson has been Dean of the Faculty of Dentistry at the University of Alberta since 1978. He completed his undergraduate dentistry program at the University of Alberta and his Masters and PhD programs at the University of Toronto. Dr. Thompson was Professor and Associate Dean of the Faculty of Dentistry at Toronto before joining the University of Alberta. He is a member of the Council on Education and Accreditation and the Dental Admissions Test

Committee and Chairman of the Committee on Continuing Education of the Canadian Dental Association; a member of the Board of Trustees and Management Committee of the Canadian Fund for Dental Education; Vice President of the Alberta Society of Public Health Dentists; a member of the Community Dental Research Coordinating Committee of the Canadian Society of Public Health Dentists and Chairman of the National Dental Epidemiology Project Committee to develop a national dental database. Dr. Thompson is a Fellow of the American College of Dentists, the International College of Dentists, the Academy of Dentistry International and the Academy of International Dental Studies.

Dr. Herbert Ptack has been appointed **Chief Examiner in Prosthodontics** in the RCDC for a three-year term. Dr. Ptack became a Fellow of the College in 1977 and has been a frequent examiner. He was born in Montreal and obtained his



Dr. Herbert Ptack

DDS at McGill University before becoming a specialist in Prosthodontics in 1968. He is Assistant Professor at the Faculty of Dentistry, McGill University and holds appointments at the Montreal General Hospital in the Department of Dentistry and on the Council of Physicians and Dentists. Dr. Ptack has served as an officer of numerous dental organizations and has been the author of many papers and lectures over the past 20 years. △

Dr. A.J. Coughlan past CDA president, passes in Saint John

Dr. Alphonsus John Coughlan, who served as President of the Canadian Dental Association in the 1953-54 term, has died in Saint John, New Brunswick, at the age of 94.

Dr. Coughlan, who was born in Saint John, and received his early education there, was later awarded a Bachelor of Arts degree at St. Joseph's University. He then entered Tufts University dental school in Boston, graduated with his Doctor of Dental Medicine degree in 1923, and subsequently passed the Massachusetts State Board examinations.

He joined the Royal Canadian Dental Corps and following his discharge, established a general dentistry practice in Saint John.

Dr. Coughlan began his contributions of service to organized dentistry there, attaining the presidency of the Saint John Dental Society. He moved on to serve as Secretary Registrar of the New Brunswick Dental Society, and later, as its president.

In 1949, he was elected to the Board of Governors of the Canadian Dental Association as the representative of the New Brunswick Dental Society.

Dr. Coughlan was named President of the CDA during the 1953 annual Convention, held in St. Andrew's, N.B.

He was a Fellow of the International



Dr. A.J. Coughlan
(Official photograph as President of the CDA.)

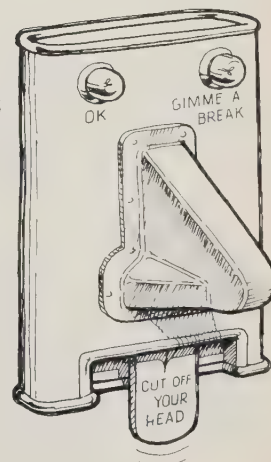
College of Dentists and a member of the Pierre Fauchard Academy.

Dr. Coughlan was the recipient of honorary degrees from Dalhousie and St. Joseph's Universities. △

Did you know?

YOU CAN NOW CHECK IF YOU HAVE BAD BREATH — ELECTRONICALLY!! A Japanese Company has developed a pocket-size breath checker called Dr. Etiquette that features a semiconductor sensor that sniffs out methyl mercaptan, the bacterial byproduct that's the chief cause of halitosis. Users of the gadget hold it up to their mouth and exhale. One of three coloured lights will flicker on, letting them know whether Dr. Etiquette thinks their breath is presentable, borderline or in dire need of mouth wash.

Expected to retail for about \$150.00 (that's about 175 rolls of floss!!), the makers of the gadget are confident consumers will pay the high price.



Dr. Arthur Dugoni, dental school dean is new ADA President



Dr. Arthur Dugoni

Dr. Arthur A. Dugoni, Dean of the School of Dentistry, University of the Pacific (UOP) in San Francisco, is the new President of the American Dental Association. Dr. Dugoni is also Professor of Orthodontics and a Diplomate of the American Board of Orthodontics.

Dr. Dugoni graduated from the College of Physicians and Surgeons (forerunner of UOP) in 1948. He earned his Master's degree and completed specialty training in orthodontics at the University of Washington in 1963. He maintained a private dental practice in South San Francisco for nearly 40 years, until 1987.

He is a Fellow of the American and International College of Dentists and the Academy of Dentistry International. Dr. Dugoni is also a member of the Pierre Fauchard Academy.

Dr. Dugoni has visited the Canadian

Dental Association headquarters in Ottawa. He was a CDA guest last February when informal talks were held in Ottawa. At that time he met and conferred with CDA President Dr. Jack Niedermayer and other CDA officials.

New President-Elect

Dr. R. Malcolm (Mike) Overbey of Memphis, Tennessee, is the new President-Elect of the ADA.



Dr. R. Malcolm Overbey

Dr. Overbey is a graduate (1955) of the University of Tennessee's College of Dentistry. He has maintained a general dental practice in Memphis since 1958. Since that date he has been an associate professor at the College of Dentistry.

He retired in November of 1987 as a Brigadier General in the United States Army Reserve Dental Corps. On retirement, he was awarded the Distinguished Service Medal. Δ

CDA Retirement Savings Plan

Unit values: (Funds are valued weekly)

Fund	Unit values as at	
	November 30, 1988	October 31, 1988
Bond & Mortgage Fund	63.07486	63.71495
Common Stock Fund	13.63254	14.13339
Money Market Fund	42.31790	42.01607
Balanced Fund	25.54435	26.04490

Interest rates:

G.I.C. Fund

Term	*Interest rates as at	
	November 30, 1988	October 31, 1988
1 yr	10.35%	10.35%
2 yr	10.35%	10.50%
3 yr	10.60%	10.60%
4 yr	10.60%	10.60%
5 yr	10.60%	10.60%

(*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

November 30, 1988	October 31, 1988
\$97,141,069	\$98,762,533

For further information:



CDA RSP

Write:

CDSPI

Retirement Services Dept.
Suite 600
2 Lansing Square
Willowdale, Ontario
M2J 4Z3

or phone, toll-free:

Western and Atlantic Canada
and Ontario Area Code 807
only 1-800-268-5418
Quebec and Ontario, (except Area
Code 807) 1-800-268-3411
Metro Toronto Area 497-7117

Did you know?

At the CDA Annual Convention held in Winnipeg in May 1914, 137 of the 1,712 dentists registered in Canada attended the three day event. If that percentage — 8 per cent — holds true in 1988, there should be 1,200 attending the CDA Convention next August. Watch this space for further results!

CFDE ANNOUNCEMENTS

Former CFDE Chairman honored



Dr. Fred Reid, right, former Chairman of the Canadian Fund for Dental Education, was recently honored by the present Chairman, Dr. Ted Ramage of Vancouver. Dr. Ramage thanked Dr. Reid "on behalf of all those associated with CFDE, for his commitment and dedication to the Fund throughout his nine years of service." Dr. Ramage made a presentation of a painting depicting the Rideau Canal in Ottawa. Dr. Reid has now gone on to serve as President of the Board of the International College of Dentists – Canadian Section. Δ

CFDE teacher/researcher training fellowship application deadline

March 1, next, is the deadline for filing applications for a teacher/researcher fellowship for the 1989/90 academic year, the Canadian Fund for Dental Education has announced.

Forms and information may be obtained from the dean's office in each of the Canadian Faculties of Dentistry or through the office of the CFDE, located at 105 – 1815 Alta Vista Drive, Ottawa, Ontario, K1G 3Y6, (613) 731-0493.

Candidates must be Canadian citizens or permanent residents who have completed an undergraduate course in dentistry, dental hygiene or a program in science and be eligible for admission to a graduate school.

Applicants must declare their firm intention to become a teacher and/or

researcher in a Canadian Faculty of Dentistry or Dental Auxiliary Training Program. The minimum commitment in this regard is two days per week and preference will be given to those applicants who will return to a full-time teaching/research position.

The number and the value of each fellowship will be determined by the Fund's Advisory Committee on Fellowship Selection and the Board of Trustees.

The names of the fellowship recipients will be announced after the CFDE annual Board of Trustees meeting, in the middle of the month of May 1989. Δ

For further information, contact: Louise Préfontaine
(613) 731-0493

CFDE/Warner Lambert offer teacher fellowship

OTTAWA – The Canadian Fund for Dental Education will again offer a fellowship for an existent university dental teacher. This award is sponsored by Warner-Lambert Canada Inc. and has a value of \$2,500.

The purpose of the award is to provide an opportunity for an established teacher to refresh and extend his/her knowledge in any field of dental education research.

The candidate must be a full-time member of the teaching staff of one of the Canadian schools of dentistry with a minimum of five years university teaching experience. The proposed program of study must be defined and well organized to ensure benefit to the individual and his/her dental school, and, minimally it must be of approximately one month's duration. Conventions and the like will not be considered as appropriate programs of study within the terms of this award.

There is no official application form, however, a curriculum vitae should be forwarded with the outline of the proposed program of study. Δ

Additional information can be obtained from the office of the Dean in each Dental School or through the Canadian Fund for Dental Education, 105-1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6, (613) 731-0493. The deadline for filing an application is March 1, 1989.



Dr. Edgecombe (seated) is seen receiving a presentation from Dr. L.A. Cormier on behalf of the Saint John Dental Society.

Dr. John F. Edgecombe, New Brunswick's senior dentist, was recently honored at his Rothesay, N.B. home on his 90th birthday.

Dr. Edgecombe, who was born in Fredericton, served overseas in the First World War in the Canadian Field Artillery. When he returned to Canada, he enrolled in dentistry at the University of Toronto, graduating in the class of 1923.

He practised in Saint John until the outbreak of the Second World War, when he again saw service. Dr. Edgecombe joined the Royal Canadian Dental Corps in 1939. He retired in 1945 with the rank of Colonel. He then resumed his practice in Saint John and remained there until his retirement in 1982.

Dr. Edgecombe has served as past president of the New Brunswick Dental Society and has held a number of offices with the Canadian Dental Association. His many professional honors include that of being a Queen's Dental Surgeon. Δ

Brian Henderson, BA, MEd, the Canadian Dental Association's Director of Education and Accreditation, has been accorded a high honor by the Canadian Dental Hygienists' Association. He was recently awarded Honorary Membership in recognition of his contribution to dental hygiene in the areas of education, accreditation and quality assurance. Δ

'To Shave or not to Shave'

In the June 1, 1987 issue of the ADA news and in other recent publications, dentists have been used to adopt barrier protection so as to prevent transmission of the HIV virus.

In addition to the routine wearing of masks, gloves and protective eye gear, I would like to advocate a change in a basic habit of all male dentists, viz. an evening shave instead of the morning ritual.

An intact skin surface is the best natural protective barrier. Why put this defence mechanism at risk just prior to patient contact? A mask does not cover the total beard area, nor do protective shields.

I have adopted the Miami Vice "Don Johnson" look, and feel it adds to the barrier protection concept. Rather than being the only "slightly unkempt" oral and maxillofacial surgeon around, I would urge others in the profession to do the same.

*Dr. Gary L. Freedman, DDS, MSD,
FACOMS, FRCD(c)
Montréal, Québec.*

Triazolam — 'uniformly good results'

I would like to thank you for the opportunity to respond to the letter by Dr. Paton

(December 1988, C.D.A. Journal). I would like to thank Dr. Paton as well, for his comments, all of which I fully agree with.

Thankfully Cimetidine has, to a large degree, been replaced by Ranitidine (Zantac) and is virtually devoid of significant drug interactions. In fact, all of my neurolept and general anaesthetic patients are given two 150 mg doses of Zantac, one the night before and the other 2 hours prior to the anaesthetic induction.

I have been using Triazolam for pre-anaesthetic medication (for both medical and dental procedures) for about four years with uniformly very good and predictable results. While it appears that the patients may stay in recovery a little longer than unpremedicated patients, the amount of potent intravenous agents that I have to use — even for very long cases — seems much reduced and their anxiety state prior to anaesthesia is also much reduced. Few patients report even remembering the venipuncture!

To my knowledge, there are no reported double-blind studies comparing Diazepam and Triazolam for dental use, although several exist for medical use under various circumstances. Such a study may well be warranted.

Dr. Paton's comment regarding Flumazenil (Anexate) is very well made

in that we recently completed a significant clinical trial in which this benzo-diazepine-antagonist was evaluated as to its ability to reverse Diazepam-induced sedation in dental patients. As with all other reported results, it proved very efficacious (paper and abstracts accepted for publication) in rousing these patients with few undesirable side effects. There has been some suggestion, and indeed we observed, that its relatively short half-life (about one hour) may result in a degree of re-sedation so that patients must be observed for some time. The release of this drug has tremendous potential.

Finally, the comment with respect to the cautious use in the elderly population is well taken. There is said to be a 22-fold variation in the response to benzodiazepines in the adult population, many of the causes having not been fully elucidated. The change in physiology, pharmacokinetics, volume of distribution, CNS changes, etc. etc., make cautious use in this population mandatory.

*E.R. Young, BSc, DDS, BScD, MSc,
FADSA*

*Asst. Professor (Anaesthesia)
University of Toronto and
The Wellesley Hospital,
Toronto.*

Down in the Mouth?

- ☐ Can't find an appropriate text?
- ☐ Gaps in your research?
- ☐ Unprepared for speeches and lectures?
- ☐ Patients with unusual conditions?
- ☐ Uncertain of a procedure?



Let the CDA Library Put the Smile Back on Your Face.

We can find information for you, at a minimal cost, on everything from appointments and scheduling to third molar extraction. Just call us or write to:

**Library
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6**

**1-800-267-6354 Western Canada and Area Code 709
1-800-267-6364 Eastern Canada Excluding Area Code 709**

Practice Prosperity — 1989

Practice prosperity has been cited as a growing concern for dental professionals faced with escalating overhead and dwindling patient bases. To address this issue The Journal is pleased to present the first of a series "Positioning For Prosperity"

Recently, I talked with a dentist who had made a decision not to get involved with a popular management program even though it had attracted all the other dentists in this area. His reason however, was simple.

"I have positioned myself as the "nice guy" in town. My practice has grown by 30% from people leaving other offices. Our practice is perceived as being low-key and conservative. This is because I have decided who I am and how I want to practice. My community sees this, and for me, it works!" In this case "nice guys" don't finish last!

Creating A Positive Impact

This is an example of what is known in marketing as "**positioning**". Positioning is defined as the process of creating a positive impact upon a client's mind by connecting with their needs, values and past experiences. Prosperity is the financial measurement for determining how successful the practice has become at building lasting relationships with dental patients. Prosperity without guilt is a result of today's health professionals defining their values carefully to include competence and caring as the foundation upon which the practice is built. Positioning for prosperity is a four step process that allows us to analyze and strengthen the following key areas:

1. **Leadership positioning** analysis of your leadership style and your impact on patients and your team.
2. **Philosophy positioning** analysis of the vision of the work that you do and how that "vision" is communicated as a positioning statement in person and in writing.
3. **Team positioning** analysis of your present team and how each of them plays their position in keeping with the philosophy of the practice.



Claudia Anderson, RDH

4. **Patient positioning** analysis of your present patient base, how the practice is perceived in their minds and how this perception impacts treatment acceptance and referrals.

The vehicle for this positional impacting is communication. Since the only reality that counts is what's already in the patient's mind, we as professionals, must become more skilled at interviewing and responding to client needs. **Dr. Robert Brandon** outlined this important area in his article "Effective Communication Skills", May 1988 edition of the CDA Journal.

Simplify The Message

"**Positioning**" allows us to simplify our message so that there is less likelihood of it being blocked, rejected or misunderstood. The human mind, unlike the new 3 1/2" compact disk, has not been enlarged in order to compact more data. Most human beings cope with information that does not meet their needs by responding: "does not compute". They pull out the plug on their switchboard. When this happens, as it does hundreds of times each day, fewer patients commit to the dentistry we offer.

Communication breakdown happens on all levels. If your receptionist per-

ceives that a patient is happy to wait half an hour without an explanation, she has less than a 50% chance of impacting positively on that patient. If your dental hygienist lectures to patients about their flossing habits instead of asking non-threatening questions, her chances of having the message perceived as valuable is less than 75%. And, if you and your certified dental assistant have had a bad day, your patient is impacted by your frustration level not your clinical excellence. People-reading has become critical to health professionals because the issues for us: **education, quality dentistry, and profitability**, are not necessarily the issues for the patient. To discover what is **important** to the patient requires skills that none of us learned in school. *However, this is information that we must have in order to be successful in today's competitive marketplace.* When we can't meet the needs of our patients and compassionately respond to their values and beliefs, they go elsewhere.

New York advertising executive, Steve Arbuit, says, "Consumers perceive quality in terms of the whole, not just the parts; a company must offer quality in the totality of its dealings with the public". If this is the case, then that commitment must be made across the board in training, products and services. It also requires, as Naisbitt and Aburdene outlined in "Re-inventing the Corporation", the best and brightest of employees.

In working with patients we can position our practice by remembering:

1. **We cannot motivate patients to accept dentistry because we want them to.**
2. **Patients are motivated to accept dentistry for their own reasons.**
3. **Our role is to discover those reasons.**
4. **Patients accept dentistry when our reasons match their reasons. It's all in the way we communicate our reasons. Δ**

Claudia Anderson is President of Anderson Programs Inc., Vancouver, B.C. She graduated from the University of Manitoba in 1965 with an R.D.H. and is presently a masters candidate in educational psychology. Claudia lectures part-time at the University of British Columbia, Faculty of Dentistry. Anderson Programs Inc., is a consulting company that works with dentists in the area of practice management.

DENTAL HEALTH MONTH '89

A Celebration of the Smile

Dental Health Month '89 is **The Celebration of the Smile! Keep Smiling** table talkers, balloons, posters, buttons, bumper stickers . . . they're all back again because they proved so popular last year. And there's more -- T-shirts, golf shirts...and an exciting new poster. Dress up! Decorate! Give Away! But...Celebrate the Smile in your office and community!

Poster Event

An extraordinary new Dental Health Month poster featuring an original interpretation of **A Celebration of the Smile** by a well-known Canadian illustrator. This is bound to be a collector's item.

size: approx 18" x 24"

CDA members: \$2.00

Non-members: \$4.00

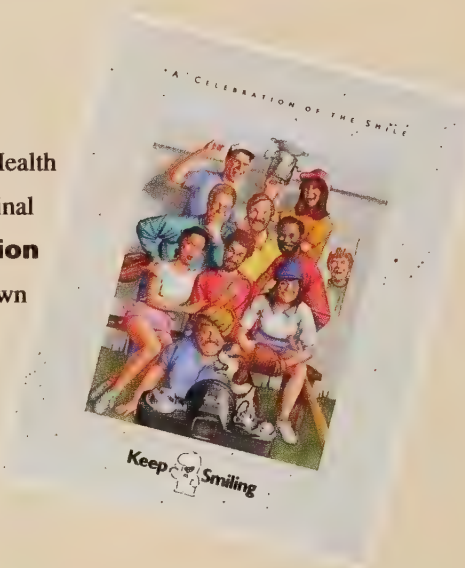


Table-Talker

Size: 7" x 8" (shipped flat)
folds to 3 1/2" x 8"

CDA members: \$0.50

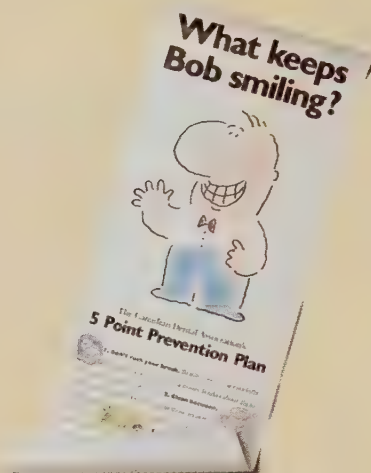
Non-members: \$1.00

Bob Poster

Size: 12 1/4" x 36"

CDA members: \$1.00

Non-members: \$2.00



Bob's Radio Commercial

A 30-second public service announcement for use by all local and regional media relations organizers during Dental Health Month.

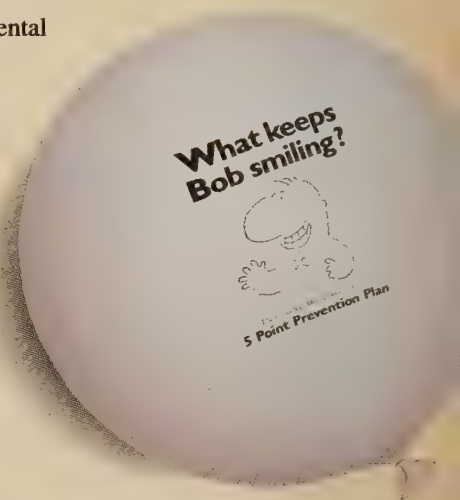
CDA members: \$8.00

Display Balloon

Size: 40" round, white

CDA members: \$7.00

Non-members: \$14.00



Two special order items:

Display Bob and the Keep Smiling Banner

will be made available for Dental Health Month if the CDA receives sufficient orders.

Display Bob

Another first for Dental Health Month -- a 5' 3" free-standing

Display Bob! Patients will be warmed by his smile as they arrive for their appointments.

CDA members: \$50.00

T-Shirts

One size only -- Xtra large.

CDA members: \$12.50

Non-members: \$25.00



Golf-Shirts

Available in S, M, L, XL.

CDA members: \$25.00 ea.

Non-members: \$50.00 ea.

Sweatshirts

Also available in S, M, L, XL.

CDA members: \$30.00

Non-members: \$60.00



Keep
Smiling

Balloons

Size: 10" round, white. (Pkg. of 50)

CDA members : \$6.50

Non-members: \$13.00



Buttons

Size: 1 3/4" round. (Pkg. of 25)

CDA members: \$5.00

Non-members: \$10.00

FREE '89 Planning Kit

For community organizers. A helpful guide to celebrating **The Smile** in your community this April. Activity ideas, media relations tips and more...

Magnetic Bob

Give him to patients for their refrigerators, file cabinets or office equipment.

CDA members: \$0.75

Non-members: \$1.50



Stickers

Size: 1 3/4" round, peel-off back paper.
(Pkg. of 100)

CDA members : \$12.00

Non-members : \$24.00



Wallet Cards

Size: 3 5/8 x 3 3/4" (shipped flat)
folds to 3 5/8 x 1 7/8". (Pkg. of 500)

CDA members : \$15.00

Non-members : \$30.00

Contact the CDA Order Section for information on personalization.



Bumper Stickers Size: 11 3/4" x 2 7/8"

CDA members : \$0.50 Non-members: \$1.00

Keep Smiling

Keep Smiling Banner

The widest **Bob** and **Keep Smiling** yet. Now there is a 3'x8' banner that can stretch across main street as the finishing line for a Miles of Smiles Run or serve as a backdrop for a display table.

CDA Members: \$75.00

Order your Dental Health Month materials today by mail or use our new toll-free lines!

1. By mail: Complete and mail the attached form along with your cheque, money order or VISA/ Mastercard number.

2. By phone : Call our NEW toll-free numbers to place your order:
1-800-267-6364 (Eastern Canada except area code 709) or
1-800-267-6354 (Western Canada and area code 709)

Please have your VISA or Mastercard number and expiry date ready.

Shipping: All orders will be sent by first class mail with prepaid shipping charges as follows: under \$29.99 = \$4.00; \$30.00 > \$99.99 = \$6.00; over \$100.00 = \$10.00; over \$250.00 call our toll-free numbers for applicable charges.

Please print or type

Complete and mail to: **The Canadian Dental Association**
Order Section, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6

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Address:

Suite #:

City:

Province:

Postal Code:

Telephone:

CDA Membership Number:

()

☐ Cheque / money order enclosed ☐ VISA ☐ Mastercard

Number:

Expiry date:

Item	Quantity	Unit \$.		Total
		Mem.	Non Mem.	
Bob Poster		1.00	2.00	
Buttons (Pkg. of 25)		5.00	10.00	
Bumper Stickers		0.50	1.00	
Stickers (Pkg. of 100)		12.00	24.00	
Table-Talkers		0.50	1.00	
Poster Event		2.00	4.00	
Magnetic Bob		0.75	1.50	
Wallet Card (Pkg. of 500)		15.00	30.00	
Balloon (Pkg. of 50)		6.50	13.00	
Display Balloon		7.00	14.00	
T-Shirt		12.50	25.00	
Sweatshirt* S M L XL		30.00	60.00	
Golf Shirt* S M L XL		25.00	50.00	
Radio Commercial		8.00	16.00	
Planning Kit		Free	Free	

Special Order (Only available if sufficient orders are received)

Display Bob		50.00	n/a	
Banner		75.00	n/a	

*Please circle shirt size

Sub Total

Please allow 4 - 6 weeks for delivery.

Ontario residents please add 8% PST

Shipping

TOTAL



Chlorhexidine

La chlorhexidine

1. Addy, M. and Dowell, P. "Dentine hypersensitivity: effect of interactions between metal salts, fluoride and chlorhexidine on the uptake by dentine." *Journal of Oral Rehabilitation*. Nov. 1986, v. 13, no. 6, pp. 599-605.
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Dental Clinics of North America. *Dental phobia and anxiety*. Saunders, October 1988.

McCarthy, G. and Hamilton, J.T. *AIDS research in dentistry*. London: University of Western Ontario, 1988. 59 pages (library has 2 copies) Δ

One copy of the above articles is available for \$5.00 to all CDA members and for \$10.00 to non-members. This bibliography was generated with the help of MEDLARS.

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ORAL DEVELOPMENT AND HISTOLOGY

Edited by James K. Avery,
with 15 contributors.

*Williams & Wilkins, Baltimore, 1987.
B.C. Decker Inc.
Distributed by C.V. Mosby,
380 pages, 750 illustrations, \$66.25.*

Into the crowded field of textbooks of dental histology comes this new entry with an original and fresh approach. Dr. James Avery, a respected research worker in the area of developmental dental histology has assembled a team of 16 authors and two dental artists to compile a very handsome treatise on the development, morphology and dysmorphology of orally-related structures. The sturdy cover portrays an enigmatic abstract design that is a micrograph of synovial and fat cells in the temporomandibular joint.

The large page size is arranged in a double-column format with illustrations occupying one column and typescript the other. This innovative design allows for direct reference of the text to diagrams, which greatly enhances comprehensibility but results in much wasted space. A further detracting factor is the small print size that must strain the eyes of even younger readers than those of the reviewer! Another innovative feature is a glossary of terminology that the first-time student should find extremely useful.

Coverage of oral and adnexal structures is comprehensive, and the "Suggested Readings" at the end of each chapter, although brief, are generally up-to-date. The capsule summaries and "Self-Evaluation Reviews" incorporated into each chapter indicate the highly didactic format of this text.

Despite the great number of authors contributing to this book, there is an overall cohesiveness of the disparate subjects covered, and tribute must be paid to the editor for providing continuity and avoiding repetition.

Coverage of the craniofacies encompasses not only development and maturation but also aging, the last topic being of increasing significance in our growing

geriatric population. The dentition is extensively explored in both classical embryology and histology, but also in an unusual teratological approach depicting defective dental development. Emphasis on practical clinical applications of dental morphogenesis is evident throughout the book, making it a particularly useful text in this regard.

As in any first edition of a textbook there are numerous minor errors of facts, misprints and misplacements of which even the authors have become aware. The numerous changes involved in correcting these errors and effecting improvements has resulted in a decision to reprint the book under the imprimatur of B.C. Decker Inc., Toronto, to be published in 1989. Accordingly, it is recommended that intending purchasers should delay buying the book until the reprinted version is available. It is a book that is well worth waiting for, and should replace many of the texts that are currently being used. It is highly recommended.

*This book was reviewed by:
G.H. Sperber
Department of Oral Biology
Faculty of Dentistry
University of Alberta
Edmonton, Alberta*

KILLEY AND KAY'S OUTLINE OF ORAL SURGERY

PART ONE

By G.R. Seward, S.M. Harris,
D.A. McGowan

*1987, PSG Publishing Co. Inc.,
Littleton, MA
400 pages, B&W photographs, \$28.00 US*

This outline of Oral Surgery is written for undergraduate students and private practitioners interested in Oral Surgery. The book is in two volumes, one for undergraduate and the other for post-graduate Oral Surgery. The field of Oral Surgery is expanding every year and therefore covers a wide range of topics. The authors of this book try to cover a vast majority of those topics.

Areas of Patient Management are covered in the first chapter. The authors

try to cover several subjects in these 28 pages making it a potpourri of information, too superfluous to be worthwhile. For general practitioners and undergraduate students extraction of teeth is the most common surgical procedure. Unfortunately, the authors have seen fit to ignore this by only making cursory comments on this aspect. Removal of roots and impacted teeth are covered very well but without any photographs and very few illustrations of any kind.

Pre-prosthetic Surgery is covered very well. Many of the surgical techniques are described in detail, though better diagrams would be more helpful to the reader. Infections of the head and neck area make one of the better chapters in this book. Space abscesses are covered extensively and properly explained. Bone infections which include osteitis and osteomyelitis, form a good basis for understanding the spread of infection. Control of infection with antibiotics and surgery is very well explained, similarly sinus infection, oral antral fistula and cysts are other worthwhile chapters. I wish authors would have spent more time on many of the basic oral surgery areas like they have done on infections and cysts. They could have easily removed chapters on drugs which belong in pharmacology and therapeutics; they could have easily left the surgical endodontics for an Endo. text book and management of pain in Oral Medicine books.

In conclusion, I feel that they have tried to include everything in this Oral Surgery book which has made it unacceptable as an undergraduate textbook. Maybe it is useful for general practitioners who already have some basic knowledge of oral surgery procedures. If redundant material and some chapters not related specific to oral surgery (like endosurgery) were removed, this would create more space to do justice to some useful chapters like exodontia.

*This book was reviewed by:
Dr. B.K. Arora
Professor & Chairman
Oral & Maxillofacial Surgery
Faculty of Dentistry
University of Alberta*

CONTEMPORARY ORAL AND MAXILLOFACIAL SURGERY

by L.J. Peterson, E. Ellis,
J. Hupp and Myron Tucker

1988, C.V. Mosby Company, Toronto,
761 pages, \$66.50

This book on Oral Surgery is published at a very appropriate time as some older textbooks (e.g. Kruger) have become obsolete and not kept with the times. This textbook moreover deals with the fundamental principles of oral surgery procedures. Surgical techniques are very well described and illustrated making it understandable to a new student. Along with the surgical techniques, biological principles are also used for explanation of techniques in most of the chapters, e.g., wound healing and infections.

Armamentarium, simple exodontia and principles of complicated exodontia are covered very well with excellent illustrations and explanation. Use of radio-

graphic photos is extensive. The chapter on impacted teeth and their management is adequate. There is a very concise chapter on management of complication in oral surgery; I feel that this could have been expanded a little more. The basic preprosthetic surgery chapter is very thorough and diagrammatically illustrated to the point where many areas are self-explanatory. The chapter on advanced preprosthetic surgery covers all aspects of vestibuloplasty, ridge augmentation, bone grafts, segmental surgery and implants. The implant section, however, needs to be updated.

The chapters on odontogenic infections are reasonably good for the basic undergraduate level. Pathological lesions like cysts and tumors are very nicely explained as far as surgery is concerned without placing too much emphasis on classification and histopathological description, which is available in pathology textbooks. Again emphasis is on undergraduate education as far as facial trauma is concerned. The general practi-

tioner is kept in mind in the management of dentofacial deformities; these chapters are not meant for specialist oral surgeons. Two excellent and concise chapters deal with facial pain and diseases of the TM Joint.

In summary, it is a very good textbook for undergraduate students and an excellent book for reference for general practitioners. It presents a comprehensive description of the basic oral surgery procedures that some of the general practitioners perform in their offices. It is also useful for post-graduate oral surgery students and specialists.

This book was reviewed by:
Dr. B.K. Arora
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Faculty of Dentistry
University of Alberta

DENTAL ASSISTING — BASIC AND DENTAL SCIENCES

edited by Christine A. Leimone
and Ethel M. Earl

The C.V. Mosby Company 1988
362 pages with illustrations

At last — a book for dental assistants written especially for them by other dental assistants. While the textbook is designed mainly for use in dental assisting teaching institutes it would be a valuable reference book for any practicing dental assistant. Using this textbook will ensure that dental assistants now understand the "why" not just the "how" in the basic dental sciences. It is less complex than similar books written for dentists and hygienists but treats the sciences in much greater detail than general dental assisting textbooks.

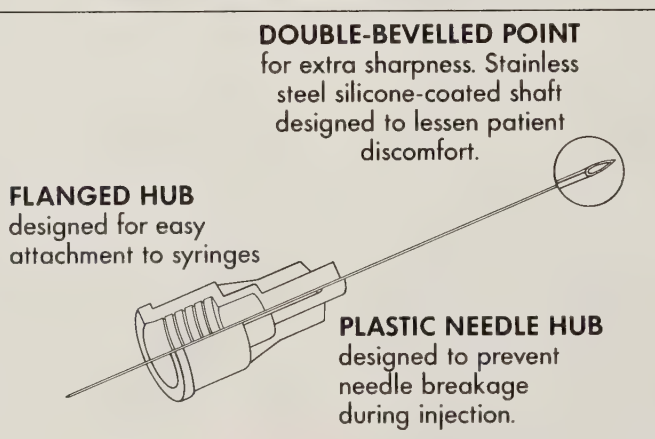
Each of the seven chapters begins with an outline of Chapter Objectives. The layout of the book makes it extremely easy to find the information as all headings are very clearly defined and the type style makes reading simple. The various chapters deal with Embryology and Oral Histology, Head and Neck Anatomy, Microbiology, Pharmacology, Medical Emergencies, Nutrition and Oral Pathology. The diagrams used in Embryology & Oral Histology and Head, Neck Anatomy are excellent. The chapter on Medical Emergencies is very concise providing just the facts and stresses needed for all members of the dental team to be proficient in basic life support techniques —

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something not always given enough emphasis in Canada. Once again this section is highlighted with a large number of very good diagrams and photos. Nutrition is adequately covered, again giving basic facts without the frills. Oral Pathology was presented in a very clear concise manner with a large number of photos. This certainly makes for easy reading and understanding. The book contains 218 illustrations. All subjects are presented at a level commensurate with the responsibilities of the modern dental assistant.

This textbook would be a welcome addition to any dental assisting program or to any dental library.

*Reviewed by Elaine Wesley, CDA
Executive Director
Canadian Dental Assistants Association*

PEDIATRIC DENTISTRY: INFANCY THROUGH ADOLESCENCE

by J.R. Pinkham et al

1987, W.B. Saunders Co. Canada Ltd.,
Toronto
544 pages, 240 illustrations, \$50.50

This is a new text edited by some of the leading educators in American pediatric dentistry. It is directed at the dental student and meant to provide a comprehensive overview of pediatric dentistry. The editors have chosen to subdivide their text into five sections organized on the basis of age. The introductory chapters deal with information and themes common to the entire age range of pediatric dentistry; the subsequent four sections are divided chronologically: Conception to Age Three; Three to Six Years; Six to Twelve Years; Adolescence. The selection of such an organizational orientation has two purposes as stated in the introduction. First, it underscores for the reader the central role of age in the provision of pediatric care. Secondly, it highlights the increased attention being paid by pediatric dentistry to the under three years and adolescence age groups.

The orientation is both a strength and a weakness. With the increasing emphasis on prevention in dentistry, the focus on the under three years age group will hopefully increase the dental student's awareness of and willingness to treat these children. I also particularly like the layout of the "Dynamics of Change" chapter in each chronologic section.

These chapters underline the physical and emotional differences of the age groups and their treatment needs. They are well done and a helpful orientation to each section. However, the organization of the text results in fragmentation of topics into several different locations in the book, making the information disjointed and at times hard to locate. For example, prevention is covered in chapters 13, 18, 30, and 37; trauma in chapters 14, 33, and 39 etc.

The four chronologic sections provide good detailed information on topics such as pre-natal counselling, caries prevention, dental trauma, pulp therapy, pit and fissure sealants and others. A few criticisms: The lack of sufficient explanation as to philosophy of treatment might easily lead the dental student to incorrectly surmise that "hand over mouth" and physical restraints are frequent methods of pediatric patient management; there is no mention of facial cellulitis, its diagnosis and treatment; the discussion on nursing caries is inadequate; The chapter on

conscious sedation is of no clinical use to the practitioner.

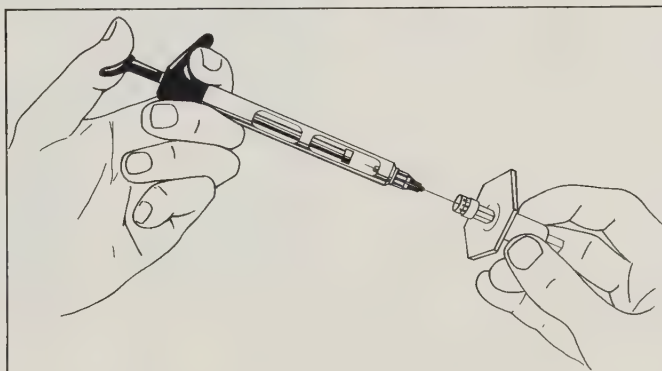
The graphics of this book are well laid out and easy to follow; The table of contents and index are thorough. Bibliographies included at the end of each chapter are variable in their quality — in some chapters very detailed, in others spartan. I believe also that the authors would have been better served by subdividing the book topically and then covering each topic with attention to the chronology of growth and development. This would eliminate the need to jump back and forth trying to find where in the book a particular item is covered. In summary, this book will best be utilized by dental students and auxiliaries. With some notable exceptions it does not provide enough detail to be of clinical use to the current practicing dentist.

*This book was reviewed by:
Ian McConnachie, DDS, MS
Division of Dentistry
Childrens Hospital of Eastern Ontario
Ottawa*

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ESTHETIC TREATMENT OF ANTERIOR TEETH

Technique choices

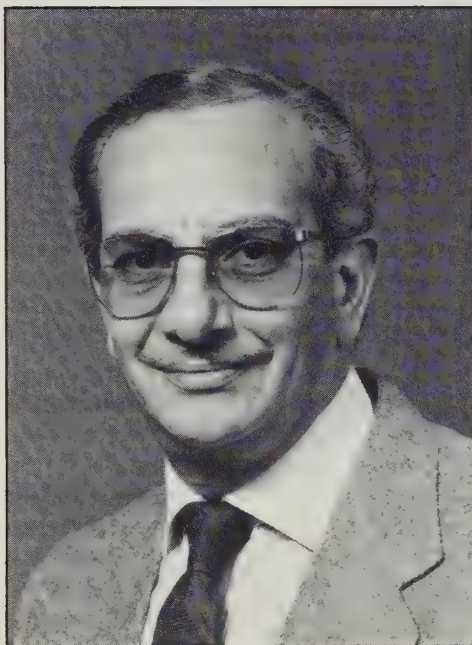
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Introduction

The advancement in the technology of composite resins in the last few years, coupled with the chemical bonding to tooth structure has made possible many esthetic treatments that were in the past reserved only to major full coverage or orthodontic treatment. Treatment may now be accomplished very conservatively. The longevity of these esthetic treatments, although not comparable to full coverage, has greatly improved through improved materials, more attention to details in application techniques, and better adhesion to tooth structure. The field of finishing instruments has also advanced greatly over the past few years, offering a large choice of hand and rotary instruments in various shapes, applications and degrees of fine abrasives. This makes it possible to achieve a high degree of success both for marginal and surface finishes — fine contours, more durability and better esthetic results.

Today's material technology offers a variety of choices in either direct materials to be applied, cured and finished directly in the oral cavity, or indirect materials that are laboratory



Dr. Louka

processed under various light, heat or pressure applications. The latter group offers superior properties. The laboratory technique is more complicated and time consuming, but offers more control of the results, because it combines both the technical experience of the laboratory and the artistic ability of the dentist, while the direct materials are solely dependent on the latter.

This article describes some treatment modalities based on groups of esthetic

problems that bear similarities to patients' needs and expectations.

Treatment of Spaces

The most common type in this group of defects is the single (diastema) or multiple spacing, which most frequently occurs on upper teeth. In this group, spaces may be further complicated by minor discoloration, such as white patches of enamel, or contour discrepancies.

Spaces without Color or Contour Irregularities

When the enamel is healthy and of normal color, the treatment is usually very simple. Selecting the proper shade of composite resin, applying it directly to the tooth to alter the contour via proper technique of enamel etching, and the application of the proper bonding agent, is in most cases adequate. The choice of material is usually dependant on the translucency of enamel, the finish expected and operator preferences. Microfilled composites offer a higher degree of translucency and a smoother finished surface, because those materials are not only filled with smaller particles, but also loaded with less particles per volume than the hybrids.

One very important esthetic principle has to be observed in treatment of spaces, that is, the ratio of the tooth dimensions mesiodistal to labiogingival and the ratio



Fig. 1. Central diastema corrected with direct resin application. Microfilled composite resin was utilized.



Fig. 2. Multiple spaces in anterior teeth. Treatment compromised the ideal tooth ratios.

of the dimensions of the centrals, laterals and cuspids. Ricketts¹ describes the application of a mathematical formula known as "Fibonacci Series" which relates a geometrical principle to the normal morphology of the human face and teeth. The "divine or golden proportion" of 1.618 exists between the width of the two central incisors and the width of the four anteriors, and also the width of the six anteriors. It also exists between the width and length of the central incisors. If this principle is not observed, the resulting esthetic effect is diminished by the loss of proportion between centrals and laterals. In most cases this is more of a dentist's concern for satisfaction of results rather than the patient's concern, since in most cases the patient is concerned with "closing spaces". Very few will observe the loss of proportion by making comments such as "the teeth now look too big".

A case of central diastema is shown in Fig. 1. Note the characterization of the resin surface produced by high speed finishing carbide burs, and then carried to a fine finish by discs and polishing pastes. A common problem that occurred earlier with this type of application was the appearance of a visible demarcation line, usually dark, after a few months in function. If the etching and bonding agent is carried about 1-2 mm beyond the area where the composite resin is applied, usually this problem is overcome.

The presence of multiple spaces as shown in Fig. 2, creates a problem with maintaining the proportion to the desired ideal relationship. Some compromise has to be achieved between the closing of spaces and the patient's expectations. In many cases, leaving a minor space combined with slight alteration to the incisal corners or labial contour, can achieve better results.

Spaces with Contour Irregularities

Contour irregularities exist in unlimited varieties, ranging from a very simple incisal edge irregularity due to malformation or abrasion, to major irregularities such as peg laterals or totally missing laterals where the cuspids have naturally or orthodontically migrated in their space.

In the case of minor irregularities, tooth contouring is done to attempt to eliminate the irregularity and improve the contour first, usually by utilizing one of the extra fine high speed diamond points followed by finishing discs. Extra care has to be exercised in order not to thin out the enamel unnecessarily. This is followed by the application of resins in a way similar to what is described above. Fig. 3 shows a case where incisal abrasion has created square incisal angles in both centrals and one lateral incisor. Contouring of the tooth angles was done first, followed by closing the diastema, which helped to achieve ideal proportion.

The success in restoring malformed teeth to a proper esthetic contour, depends a great deal on the knowledge and understanding of the basic tooth shape, form and contours. The shape of the embrasures, transitional line angles and incisal angles, produce not only a proper anatomical form, but also a relationship between a person's smile, facial contour and physiologic age.² For example, a young feminine smile is characterized by soft line angles, rounded incisal angles, and open incisal and facial embrasures. Esthetic contouring of individual teeth, either during restoration of the tooth or simply by minor alteration of its shape, can result in great improvements in esthetic results.

In cases of major contour irregularities, peg shaped laterals are among the most common defects. If peg shaped laterals are not complicated with major alignment discrepancies, such a condition lends itself to more than one successful method of treatment. The simplest is the direct resin application, usually with successful results. Attention has to be paid to the newly created gingival contour and its relationship to the dental papillae, to maintain proper marginal finish and physiological relationship that will avoid periodontal problems in the area. Another common problem is associated with the over-eruption of the lower cuspids to engage the embrasure distal to the lateral incisor during lateral functional excursions and disclusion. Allowance has to be made in the newly created contour, or else the lower cuspid has to be contoured. In some cases, a combination of both is necessary to achieve good esthetic results and freedom of movement in lateral excursions. Fig. 4 shows a case treated with direct resin application, producing good esthetic results, and maintaining proper proportion between centrals, laterals and cuspids.

An alternative technique is the application of indirect veneers. This technique, which will be dealt with later, offers better esthetic results and more predictable contour, but is more costly to perform.

In cases of missing laterals that are replaced by migrated cuspids, the problem is more complicated, especially if there is contour or color modification involved. One main reason for the complexity is that cuspids are larger teeth in both mesiodistal and gingivoincisor dimensions, in addition to the contour bulge at the gingival third. The fact that cuspids are darker teeth than laterals creates an additional problem in correcting the shade. An attempt to modify



Fig. 3. Spaces combined with contour alteration. Correction of tooth contour is shown in b, the space closing is shown in c.

the cuspids to take a shape similar to laterals, usually results in some contour compromises.

Direct resin laminate application following the appropriate contouring offers a reasonable answer with a fairly simple direct technique, while a more involved technique such as the porcelain veneers can offer better esthetic results. Porcelain veneers are the most esthetically pleasing techniques known at the present time, promising the best known longevity, and minimal, if any, periodontal problems. This technique is described in detail in a text book³ as well as a number of published articles and technique video tapes.^{3,4,6}

When utilizing the porcelain veneer technique, a minimum of four teeth have to be done. Most authors prefer six anteriors since the bicuspids need modification so that they will simulate the contour of cuspids. **Fig. 5** shows a case of congenitally missing laterals, treated with direct resin veneers. Note the compromise in the labial and gingival contours that was dictated by the contour of the cuspids. **Fig. 6** shows a case treated by porcelain veneers, where better esthetic results in controlling the contour were achieved. The problems in discoloration and irregularities at the incisal edges were also managed well.

Treatment of Discolorations

Treatment of discolorations are more complicated and require not only artistic ability and appreciation of the anatomical and esthetic principles of tooth form, but also an understanding of the principles of color modification. Composite resins are monochromatic, i.e., are limited to producing one color. Tooth color is polychromatic, varying between incisal edge and gingival color, due to thickness and different colors and translucency in enamel and dentin.⁵ Composite resins differ in their degree of translucency depending on their type. A microfilled resin offers more translucency than hybrids, therefore, hybrids can more



Fig. 4. Peg lateral incisors corrected with direct resin application.



Fig. 5. Congenital missing laterals corrected with direct resin application. Some contour compromise was dictated by the shape of the cuspids.



Fig. 6. Case similar to Fig. 5, complicated by discoloration and irregularities, treated by porcelain veneers. A more superior esthetic result is achieved.

successfully represent dentin, while microfills represent enamel. Opaquers are at times necessary to block out the discoloration of the natural tooth tissue in cases of major discolorations such as tetracycline staining. Tints can be utilized under a layer of microfilled resin to produce a polychromatic effect. While opaquers have the disadvantage of limiting the

depth of the color, tints under a translucent layer would, to some degree, correct such an effect.

As an alternative to composite resins for treatment of discolored teeth, porcelain veneers may be utilized. As mentioned earlier, porcelain veneers offer excellent contour, surface texture, periodontal health and longevity, but they



Fig. 7. Discoloration and contour irregularities, treated with layered resin technique. Opaquers and tints were utilized to control the discoloration.



Fig. 8. Discoloration and minor contour irregularities, treated with porcelain veneers. Excellent esthetic result, despite some compromise with color correction.

offer limited effect when tooth color correction is the major outcome expected.

Discoloration with Minor Contour Alteration

Based on the previous discussion, cases of discoloration with minor contour changes may be treated with either resin or porcelain veneers. Direct applied veneer, as in the technique described by Larson,⁵ utilizes a layer of opaquer to block out the dark color of the tooth and simulate the desired dentin color. The tints are applied over the opaquer to offer a variation of incisal and gingival colors, and to provide a desirable polychromatic effect. A uniform top layer of microfilled resin is then applied to simulate the translucent enamel. The microfilled resin could be finished with a texture and smoothness to simulate enamel. Although this technique offers one of the best controls on color modifications, it has two main disadvantages. First, excessive use of opaquer limits the depth of color and gives some chalky appearance to the finished veneer. Secondly, the esthetic effect is greatly dependant on the dentist's artistic skill and understanding of the principles of color. Fig. 7 shows a case treated by resin veneers, the effect of the use of opaquer is eminent but unavoidable since the tooth discoloration has to be masked. In this technique, no enamel preparation is recommended except to correct contour when desirable.

Porcelain veneers require enamel preparation primarily to enable the operator to finish the gingival and interproximal contour without excessive bulges, since porcelain cannot be produced with a very thin edge. Porcelain can be utilized when the patient's primary concern is the contour, and the general appearance, rather than a change in color.

Opaquers may be utilized with porcelain veneers, but they have to be applied prior to impression making, and since these cases are not temporized in general, it may result in the loss of the opaquer. Opaquers may be used with the resin cementing medium utilized to cement the veneer to the tooth enamel, again, at the cost of affecting the translucency and depth of color of the porcelain. Fig. 8 shows a case of discoloration treated with porcelain veneer. Note the excellent esthetic result obtained, although some sacrifice of color correction had to be accepted.

Discoloration with Major Contour Alterations or Spaces

In this group of defects, since major adjustment to the contour has to be done either in the form of correction of tooth contour, or correction of existing spaces, porcelain veneers offer more reliable results when compared with resin veneers. Laboratory processed resin veneers may be considered in these cases as an alternative to porcelain veneers.

They offer two advantages when compared with porcelain. First, the cost is slightly less, since only the laboratory fee is different. Secondly, the placement technique is not as delicate as in the case of porcelain. The disadvantages are mainly the monochromatic effect, (except for an incisal translucent area), and the surface texture and finish which is inferior to porcelain. Also, the durability of resin veneers is not quite as promising as porcelain.

The Single Discolored Tooth

The single discolored tooth offers one of the most challenging efforts to correct in anterior esthetics. To be able to correct the color, block underlying discoloration, reproduce enamel translucency and shade to match the neighbouring tooth, is near impossible at times. Reid⁶ describes a technique utilizing porcelain veneer together with opaquers and tints. A direct laminate, utilizing opaquers and tints may also be utilized. Once again, the treatment of the single discolored tooth is a great challenge, and patient expectations have to be kept within reality. Non-invasive techniques should be preferred in this treatment, since the potential for removal and corrections should be considered. Also, since most of the single discolored teeth have a history of trauma and endodontic treatment, enamel removal in most cases exposes deeper discolored dentin.

Summary

The esthetic treatments of anterior teeth offer a variety of challenges. The dentist's artistic talents, understanding of the principles of esthetics and color are key points in planning and performing a successful treatment. The availability of different modalities of treatment should help provide the patient's needs and expectations. A thorough knowledge of the advantages and limitations of each treatment modality, and each clinical situation, should help in making appropriate treatment decisions. Δ

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OCCUPATION:

POSTERIOR COMPOSITE RESINS

Karl F. Leinfelder, DDS, MS

This paper was originally published in a special edition of the Journal of the American Dental Association (JADA) in September, 1988 (pages 21-E to 26-E). It is reprinted in this edition of the Journal of the Canadian Dental Association by special permission of the editors of the JADA.

A quarter of a century ago, composite resin was introduced and quickly outmoded silicate cement and acrylic resin as a restorative material. Although composite resin cannot replace amalgam, it has a strong foothold in dentistry, most notably for its superior color-matching ability. This article contrasts many properties of composite resin to amalgam, and takes a look at new developments in posterior esthetic materials.

More than 25 years ago, R.L. Bowen introduced a new restorative material called composite resin to the dental profession.¹ Almost at once, it replaced silicate cement and its immediate predecessor, acrylic resin. The rapid acceptance of composite resin by organized dentistry was based on several important considerations. These included its excellent color-matching ability, substantially improved physical properties, and the relative ease of handling. These improved properties resulted from the incorporation of high levels of ceramic filler particles into a strong, wear-resistant resin matrix.

Soon after it was introduced, composite resin was recommended for use as an amalgam substitute. These recommendations were based on its relatively high

compressive strength (40,000 psi or 275 MPa), and resistance to mechanical abrasion. Although short-term clinical studies appeared promising,² extended investigations showed that composite resin could not be used as a substitute for amalgam in posterior teeth.³⁻⁶

The first major improvement in posterior composite resins came about with the introduction of a restorative material called P-10 (3M Co). Interestingly, this material was a simple modification of a restorative material called Concise, which was marketed by the same company (3M Co) for anterior teeth. Essentially, the only difference between the two materials was the size of the filler particles and the level of loading. Selected properties of the two materials are compared in Table 1. The particle size of P-10, as compared with Concise, was reduced from 30 μm to approximately 3 μm . Furthermore, the filler loading was increased from 76 per cent to 83 per cent. Interestingly, the wear resistance of the P-10 formulation was improved substantially. Specifically, the annual rate of wear was decreased from approximately 100 μm for Concise to less than 50 μm for P-10.⁷

By decreasing the particle size and increasing the number of particles per

unit volume, the masticatory stresses on the individual particle were reduced substantially. This early breakthrough gave rise to the concept used today by most manufacturers of posterior composite resins. Currently, most posterior composite resins on the market contain filler particles that range in size from 1 to 5 μm .

The incorporation of smaller filler particles not only resulted in an increased wear resistance on the occlusal surface, but on the approximal surface as well. A common clinical example is shown in Figure 1. During mastication, proximal surfaces of the composite restoration and the amalgam restoration rub against one another. The extruding filler particles of the composite resin will then generate subsurface stresses in the underlying composite resin, resulting in a loss of material. In an effort to maintain proximal contact, the tooth distal to the worn proximal surface tends to migrate in a mesial direction.

Interestingly, this undesirable situation no longer occurs in composite resin formulations. This improvement results from the smaller filler particles used in current materials. Solving this problem alone has generated a greater acceptance of the composite resin as a restorative material for the distal aspect of canines.



Fig. 1. Clinical photograph of a Class II restoration showing wear on the approximal surface. Because of deterioration of the restoration, the maxillary first molar has migrated mesially in an effort to maintain proximal contact.



Fig. 2. A posterior composite resin restoration with an ideal color match.

TABLE I

Comparison of selected properties for Concise and P-10 (3M Co).

Property	Concise	P-10
Matrix	BIS-GMA	BIS-GMA
Filler	Quartz	Quartz
Particle size	30 μm	3 μm
Weight (% filler)	75	86
Coefficient of thermal expansion	35 ppm/C	22 ppm/C

Amalgam versus composite resin

Before the clinician substitutes posterior composite resin for amalgam, the major differences between the two materials need to be considered. Contrasting information should help in determining which agent could best be used for a given clinical situation.

Color matching ability

The greatest advantage of the posterior composite resin is its potential for resembling tooth structure. Many of the currently available materials closely match the natural shade and translucency of enamel. Furthermore, many can be finished to a highly reflective surface that is indistinguishable from polished enamel. A typical example is shown in **Figure 2**.

For example, in a recent study dealing with Herculite (Kerr Manufacturing Co), Wisniewski and others⁸ found that 98 per cent of the restorations at the time of insertion exhibited an ideal color match.

After three years, this value decreased only to 88 per cent. Furthermore, in 98 per cent of the cases, the surface texture remained as smooth as the adjacent enamel. A similar situation was found by Mazer (R.B. Mazer, personal communication) who recently completed an extensive study on Heliomolar (Vivadent, USA, Inc).

The ability to match the surrounding tooth structure has become so ideal that it may actually present a clinical problem. In particular, the ability to ideally match the adjacent enamel makes it difficult for the clinician to determine the exact location of the margin during the finishing process. As a result, there may be a tendency to reduce sound surface enamel while trying to locate or establish the margin. For this reason, the clinician may wish to use a material that is slightly mismatched in shade or translucency.

Wear resistance

One of the greatest concerns for the use of composite resins in posterior teeth has been its resistance to wear. The first composite resins used as occlusal restorations, for example, exhibited wear rates of 100 to 150 μm per year. The use of Adaptic (Johnson & Johnson Dental Products) and Concise (3M Co) in centric holding areas, particularly in the molar region, resulted in supereruption of the antagonistic tooth. If the preparations were extensive, and if multiple teeth were involved, a loss of vertical dimension was expected.

Today, nearly all of the posterior composite resins are substantially more resistant to wear than their predecessors.

In fact, some of them have an average wear rate of less than 1 μm per month. Therefore, these composite resins are as much as ten times more wear resistant as those used for the same purposes only several years ago.

In a recent study, Wilder and coworkers,⁹ monitored the wear rate of Estilux (Kulzer, Inc) during an eight-year period. They found that the wear rate was less than 20 μm per year. More recently, Mazer (R.B. Mazer, personal communication) has shown that the wear rate of Heliomolar (Vivadent, USA, Inc) and P-50 (3M Co) during an average year was less than 12 μm . These values were determined by measuring the height of the exposed enamel wall between the cavosurface margin and the surface of the composite resin on the occlusal surface.

In comparison, Lambrechts and others¹⁰ and Lutz and coworkers¹¹ have carried out similar investigations on amalgam restorations. In their studies, they showed that the annual wear rate was 10 to 12 μm per year. Based on this information, the differential in wear rates between posterior composite resins and amalgam has been reduced substantially.

Wear rate, however, can be significantly affected by a number of factors, especially the location and size of the restoration. In general, the more distal the restoration, the faster the rate of wear. Therefore, those composite resins placed in molars will wear away faster than those inserted into premolars.

Recently, an index has been published that relates tooth position to the amount of wear measured on the occlusal surface.¹² This relationship is presented in

TABLE II

Relative wear rate as a function of location.

Location	Wear rate
Mandibular first premolar	1
Maxillary first premolar	3
Maxillary and mandibular second premolars	4
Maxillary first and second molars	5
Mandibular first and second molars	6

Adapted from Leinfelder, K.F. Composite resin. Dent Clin North Am 29:359-371, 1985.

Table 2. On an average, the wear rate of composite resins in molars is approximately twice that observed in premolars.

Of equal importance is the size of the restoration. As a rule, the greater the buccolingual dimension, the faster the rate of wear. This association is clearly related to the amount of masticatory stresses to the surface of the restoration. Therefore, both the width of the isthmus, as well as the buccolingual dimensions of the proximal box, should be minimized as much as possible.

From a clinically significant point of view, Lutz and coworkers,¹³ Ameye and coworkers,¹⁴ and Lambrechts and others¹⁵ have shown that two types of wear patterns occur on the occlusal surface. The first is localized wear in the occlusal contact area. The other is generalized wear over the entire occlusal surface excluding the contact areas. Interestingly, it was shown that the wear in the occlusal contact area is 3.5 times as great as that in the contact free area.

Because of the wide range in rate of wear, the clinician must be selective in the use of posterior composite resins. If, for example, all of the contact areas are located on the occlusal surface of the proposed restoration, the amount of wear will be greater than average. A clinical example of such a condition is illustrated in **Figure 3**. In **Figure 3**, there is an excessive amount of wear in the area involving the central pit. In contrast, the restoration in the first molar is relatively free from this type of defect. In this case, the contact areas are located on the buccal cusps rather than on the restorative material. Another example is illustrated in **Figure 4**. The centric stops are located on the maxillary second molar.

Longevity

The clinical longevity or average time to failure for the early posterior composite

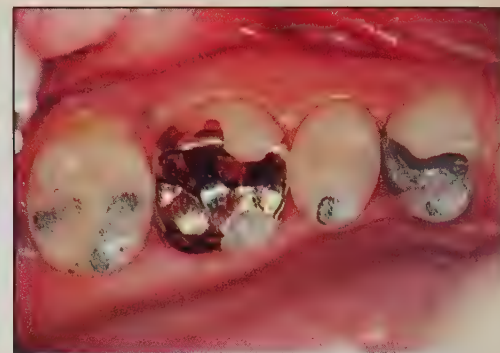


Fig 3-5. **Fig. 3**, top left, localized wear resulting from strong occlusal stops. **Fig. 4**, top right, localized wear resulting from a strong occlusal contact on the surface of the composite resin. **Fig. 5**, bottom left, definite fracture running through the buccal cusp; this type of fracture commonly results from the shrinkage accompanying polymerization.

resins normally ranged from 2 to 3 years. The most common cause for replacement was loss of anatomic form (wear) or secondary caries, or both. In comparison, the amalgam restoration has a service life that is considerably longer. Although estimates vary, depending on the source of information, a properly placed amalgam restoration can be expected to last 10 to 20 years.

Today, the greatest factor governing the clinical longevity of posterior composite resins is the manner in which the material is used to restore the prepared tooth. Inadequate attention to technique details will invariably result in early failure. A posterior composite resin placed under the appropriate conditions and monitored routinely, however, can be expected to last 10 years or longer.

Caries

The greatest potential problem associated with the posterior composite restoration is secondary caries.¹⁵ Once caries is initiated, decay progresses at a substantially faster rate than in association with an amalgam restoration. For example, once detected clinically or radiographically, caries under a composite restoration can breach the pulpal chamber in as little as 6 to 8 months. In comparison, the same caries under an amalgam restoration will take considerably longer to travel the same distance.

More research is needed to determine if silver, tin, copper, or mercury of the overlying amalgam possess some type of cariostatic property. On the other hand, there may be little or nothing in the

polymer of the composite resin to restrict caries activity. Furthermore, as posterior composite resins are more prone to defective margins, unless carefully manipulated, micro- or macroleakage is more probable. Under such a condition, the continuous introduction of nutrients via oral fluids may be a contributive factor.

Bonding

One of the unique features of posterior composite resin is the ability to bond to the walls of the cavity preparation; under certain conditions, it enhances the strength of the tooth itself.

As composite resins become more wear resistant, it will be possible to use them in preparations more extensive than those for amalgam. Buccal and lingual cusps of teeth restored with large amalgam restorations fracture and often deteriorate. For example, maxillary premolars restored with large mesio-occlusal-distal amalgams completely dislodge on occasion one or more of the cusps. In most situations, this occurs when the isthmus of the preparation is too extensive. If the composite resin was sufficiently wear resistant, it could provide a solution for this perplexing problem.

Pulpal protection

Although pulpal protection is occasionally required in conjunction with amalgam restorations, it should be used routinely with composite resin restorations.¹⁷ This is particularly true in posterior teeth where the surface area of the cut dentin is normally greater than in anterior teeth. The recommended protective agent has

been a thin layer of calcium hydroxide. In theory, this liner protects the pulpal tissue from any of the unpolymerized organic components of the overlaying composite resin.

One of the major problems associated with calcium hydroxide liners and bases is that they tend to disappear from beneath the restoration. Although the exact mechanism for this deterioration has not been documented, it may be related to ionization of the liner. In this regard, the odontoblastic fluids probably disunite the calcium hydroxide into calcium and hydroxyl ions. These then may be transferred into the pulp and subsequently disseminated into the body.

Currently there is a trend to substitute glass ionomers for calcium hydroxide. As glass ionomer does not disappear under the restoration as calcium hydroxide sometimes does, it can support the overlaying restoration. If the calcium hydroxide disappears from the pulpal floor in either Class I or II cavity preparations, there is no longer the normal support required for rigidity. Furthermore, unlike calcium hydroxide, the glass ionomer releases fluoride ions.

Calcium hydroxide, however, is recommended in areas of deep excavation, small "pin-point" exposures, and in areas where viable caries-producing microorganisms may not have been removed.

Polymerization shrinkage

Both researchers and clinicians are becoming more aware of the volumetric shrinkage associated with posterior composite resins. Although the amount varies considerably among materials,¹⁸ the shrinkage for the average posterior composite resin ranges between 2.5 per cent and 3.5 per cent. The amount of shrinkage depends on the filler content. Microfilled composite resins generally undergo greater contraction during curing than those belonging to the intermediate group. This factor relates to the relatively low amount of filler content.

The basic problem associated with polymerization shrinkage is its overall effect on marginal adaptation. The forces generated on the wall of the cavity preparation during curing may be considerable. In fact, Davidson and DeGee¹⁹ and Bowen and others²⁰ have reported stress values at the restoration-tooth interface of between 400-925 psi (2.8-6.4 MPa). Under these conditions, the restorative material actually may be pulled away from the wall of the cavity preparation. This will then result in localized void(s), vulnerable to microbial invasion and

eventual secondary caries. For this reason, the use of acid etching and bonding agents is highly recommended.

The bonding agent actually serves two purposes. The first is to enhance wetting of the prepolymerized composite resin to the prepared cavity. The second is to bond the restorative material to the preparation with enough adhesion to overcome the stresses generated by the curing shrinkage.

Because the enamel bonding agents adhere to the enamel effectively (tensile bond strengths commonly exceed 2,000 psi or 13.8 MPa), the potential for the composite resin to pull away is not great. However, this potential is based on a satisfactory adaptation of the prepolymerized resin.

Unfortunately, the enamel bonding agents do not bond to the dentinal surfaces. Consequently, it can be expected that the shrinkage accompanying polymerization results in some degree of separation between the resin and the floor of the preparation. In the case of dentin bonding agents, however, the potential for postpolymerizing adaptation is better. Unfortunately, bond strength of most second generation bonding agents does not exceed 600-750 psi (4-5 MPa). In fact, a review of 11 different publications by Retief and others,²¹ which involved four different bonding agents (Scotchbond, 3M Co; Creation Bond, Den-Mat Corp; Dentin Adhesive, Vivadent, USA, Inc; and Dentin Bonding Agent, Johnson & Johnson Dental Products), showed that the mean bond strength was only 550 psi (3.8 MPa). Additionally, in the study, they demonstrated that the mean bond strength of Scotchbond was only 450 psi or (3.0 MPa).

With this information, it can be reasoned that the bond strength is not sufficient to overcome the interfacial stresses caused by polymerization shrinkage. Consequently, the clinician cannot routinely depend on a satisfactory bond between the agent and dentinal surface.

Recently, a limited number of new generation dentin bonding agents have been marketed. Identified as Scotchbond II, 3M Co; Gluma, Columbus Dental; and Tenure, Den-Mat Corp, these new materials may be more promising. In an ongoing clinical study at the University of Alabama at Birmingham, the results have been quite encouraging. At the end of six months, the retention rate of Scotchbond II/Silux restorations on nonetched, nonprepared cementum surfaces was nearly 95 per cent. The tensile bond strengths as reported by Retief and others²² was more than four times as



Fig. 6. Definite fracture resulting from polymerization shrinkage. Note that the fracture line tends to run parallel to the cavosurface margin.

great as that reported by its predecessor, Scotchbond.

Another clinical problem attributed to polymerization shrinkage is possible fracture of the adjacent enamel.²³⁻²⁶ In moderate-to-large restorations, particularly in premolars, readily detectable fractures may occur on the lingual or buccal surfaces of the restored teeth. Often, the fracture runs mesiodistally 2 to 3 mm below the occlusal table (Fig. 5). Another view of the same type of fracture is depicted in Figure 6. The fracture line tends to run parallel to the cavosurface margin.

As a rule, this type of defect occurs almost immediately after polymerization. As the restoration is bonded micro-mechanically to the wall of the preparation, the enamel above or occlusal to the fracture normally does not separate from the tooth. As a preventive measure, however, it might be appropriate to thoroughly clean the surface on which the crack occurs, etch, and then place an enamel bonding agent. This procedure can be recommended on the basis that it should fortify the defective area, as well as seal the crack from microbial invasion.

Perhaps the best way to prevent this type of defect is to reduce the size of the preparation. Unfortunately, the size and shape of the preparation are often mandated by the previous restoration. With this in mind, the most practical approach is to place the composite resin in small increments. The smaller the individual segments, the less the overall shrinkage.

New developments

To resolve some of the problems associated with the posterior composite resin, new techniques have been introduced. One approach has been the introduction of the composite resin inlay. After an inlay cavity preparation is generated, a separating agent is applied to the walls of the preparation. Next, the tooth is



Fig. 7,8. Fig. 7, left, scanning electron microscopical view of interfacial gap between edge of preparation and the ceramic inlay. Note that the composite resin luting agent has worn away considerably. Fig. 8, right, a porcelain inlay with one fractured margin. There is a loss of luting agent after 1 year of placement.

matrixed and then restored with a composite resin. The restorative material is photocured, contoured, and surfaced in a conventional manner. At this point, the composite inlay is removed from the cavity preparation. It is then heat treated in a dry heat oven at about 125 C (250 F) for 7 to 10 minutes.

Next, it is cemented into the acid-etched preparation with an appropriate luting agent. As a rule, the cementing material consists of a modified composite resin that is polymerized by photo and chemical activation. The chemical activation is a slow process that takes over after the composite resin has been photocured. This technique is commonly used to ensure adequate polymerization. It is speculated that the energy from the light source may not penetrate through the inlay to the underlying luting agent.

The purpose of the heat-curing process is to increase the wear resistance of the restoration. This concept is based on two studies by Wendt,^{27,28} who showed a significant increase in certain mechanical properties when a specific heat-curing procedure is used. These include hardness, tensile strength, and resistance to abrasion. A subsequent clinical study by Wendt and Leinfelder,²⁹ however, showed that the additional heat-curing process had no significant effect on wear resistance.

Perhaps the most important advantage of the heat-treated inlay system, however, is the substantial control over marginal adaptation, proximal contour, contact, polymerization shrinkage,

microleakage, postoperative sensitivity, and secondary caries. It is for these latter reasons then that the system has been attracting the attention of many clinicians.

To enhance the wear resistance even further, a growing number of professionals are restoring teeth with porcelain inlays and onlays. As porcelain is at least as wear resistant as human enamel, the concept is appealing.

One of two types of porcelain may be used. The first of these resembles conventional dental porcelain in composition. Essentially it contains small particles of quartz embedded in a matrix of feldspar (Ceratec, Den-Mat Corp). The second type is a castable ceramic (Dicor, Dentsply Intl), and does not contain quartz. The conventional porcelain inlays generally are fabricated directly on a refractory investment material. The castable ceramic inlays are generated using the lost wax technique.

In either case, the cavity side of the inlay is etched with hydrofluoric acid. The etching process generates a highly circuitous surface, which in turn permits micromechanical retention of the composite resin luting agent. After etching, the surface is treated with a silane coupling agent. Next, the enamel walls of the preparation are acid etched and the porcelain inlay is cemented with a dual-cure resin luting agent.

The ceramic inlay provides all of the advantages of the resin inlay but because of its hardness it is more wear resistant. It should be pointed out, however, that

once the glaze is broken, the exposed particles of quartz have the potential for abrading the antagonistic cusps.

One of the basic problems with all of the inlay techniques is the luting agent. Unfortunately, this aspect of the procedure has been given the least amount of attention. Although they are relatively insoluble in oral fluids, most of them are not highly wear resistant when subjected to strong masticatory stresses. For this reason, the interfacial gap should be minimized as much as possible. Margins in excess of 100 to 200 μ m commonly result in a defect such as the one illustrated in **Figure 7**. For the purpose of orientation, the porcelain inlay is located in the bottom half of the photograph and the enamel occlusal surface is located at the top. There is apparent loss of luting agent, which in this case occurred after only one year of service. Under this condition, serious clinical problems can be anticipated. These include fractured margins, microleakage (**Fig. 8**), and secondary caries.

To prevent these types of problems, it is suggested that the interfacial gap or distance between the cavosurface margin and the margin of the inlay be no greater than 75 μ m. Furthermore, a resin luting agent should be used which has been shown to be highly wear resistant.

Finally, the latest in posterior esthetic materials is the computer-generated inlay or onlay made of porcelain. Developed at the University of Zurich in Switzerland,³⁰ ceramic restorations are made using an optical topographic scanning procedure

and an electronically controlled device that mills porcelain blocks. After the cavity preparation is completed, a small camera device records the tooth from the occlusal surface. At this point the clinician electronically designs the restoration. On command, the system then cuts the porcelain inlay to extremely close tolerance. Both the computerized designing and actual milling of the restorations from the ceramic block takes only 10 to 15 minutes.

This system, which is marketed by Siemens, offers a number of major advantages. First, no impression or temporary restoration is required. Second, no outside laboratory work is involved. Compared with the composite resin, the computer-generated restoration is better. In addition to its excellent color-matching capability and wear resistance, the computer-generated restoration has optimal adaptation to the prepared tooth and excellent anatomic form. Perhaps, however, its greatest attribute is the potential for longevity.

Conclusions

During the last 25 years, no material has received greater attention than the composite resin. Consequently, dentists have witnessed substantial improvements in both materials and techniques. Composite resins, however, cannot be considered as a substitute for amalgam. They should instead be considered as a supplementary material. When used appropriately, composite resins offer the clinician an opportunity to treat patients in a manner never before possible. △

Information about the manufacturers of the products mentioned in this article may be available from the author. Neither the author nor the American Dental Association has any commercial interest in the products mentioned.

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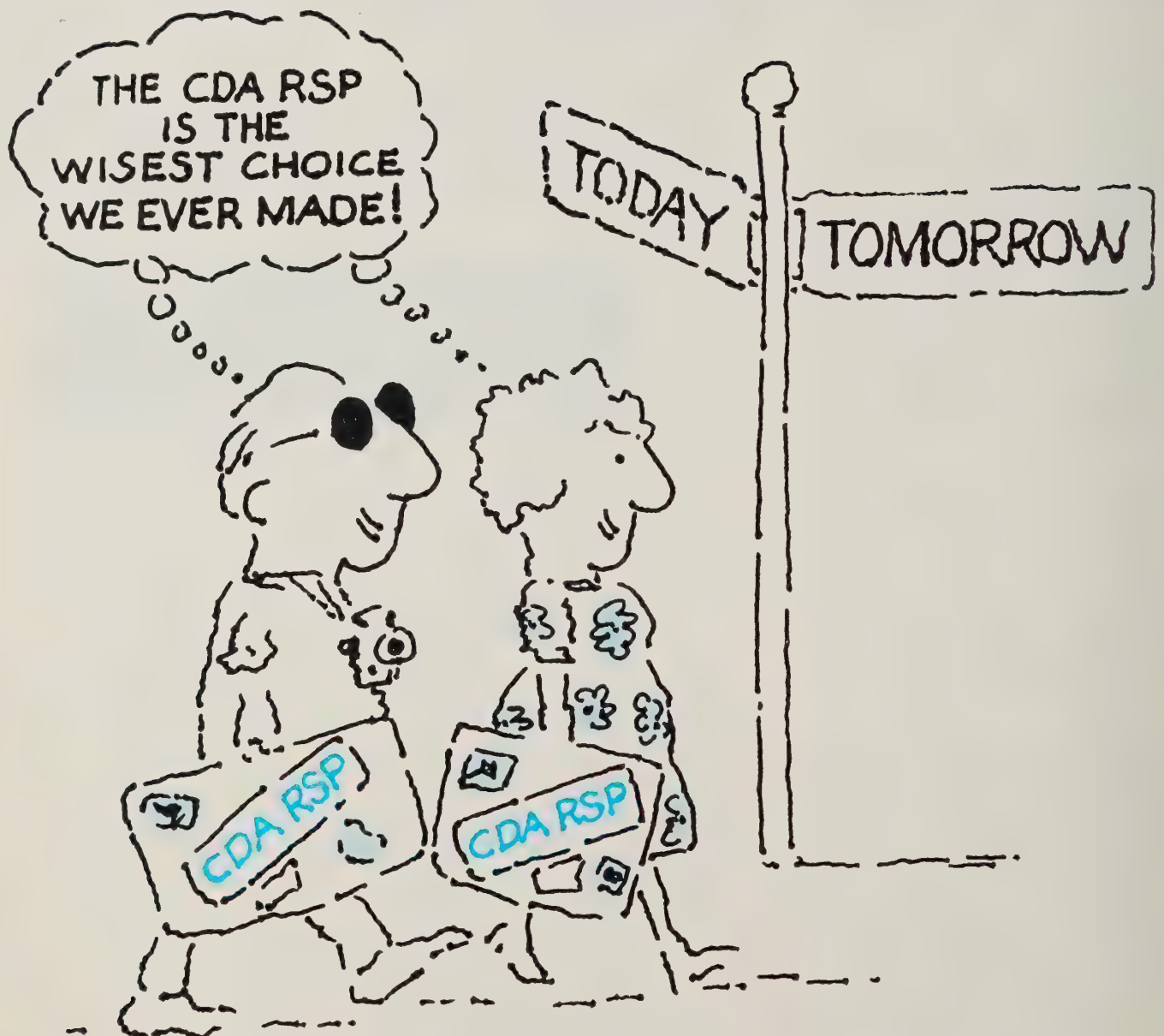
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CDA Policy statement* on sweeteners in medication

The Canadian Dental Association is concerned about the high levels of sugar used as sweeteners in both prescription and over the counter drugs. The sugar content of the formulations is from 20 per cent to 60 per cent on average.

Patients particularly at risk include small children and infants on long-term medications who have not yet established proper oral hygiene. Disorders that may be treated could be asthma, recurrent otitis media or cardiac defects. The presence in the mouth of sweet syrupy medications could cause the same high rate of dental caries as baby bottle caries.

Research has shown that there are sugar substitutes that cause little or no dental caries.

The Canadian Dental Association position is as follows:

1. Health Care practitioners, especially paediatricians, dentists and pharmacists, should be made aware of the high sugar content of medications and try to prescribe drugs employing non-cariogenic media suitable drugs. Also, that they should advise patients or parents of small children of the risk of more tooth decay from chronic use of a sugar sweetened drug. Parents should also be informed on how to develop a proper oral hygiene program for their children.
2. The Pharmaceutical Manufacturers Association and Proprietary Drug Association should be made aware of the high risk of decay associated with prescription and over the counter drugs containing sugar and should be encouraged to employ sugar substitutes in medications.
3. Health and Welfare Canada should be encouraged to have medications marked as to sugar content and to promote the use of alternatives to sugar in medications.

The Canadian Dental Association is always interested in the best dental health care of Canada's population and prevention of decay by the removal of sugar from medications is one more step towards ideal oral health for all.

Presented by the Council on Health Care and adopted by the CDA Board of Governors, August, 1986.

*Drawn from ODA Policy Statement prepared by the Health Care Committee, November, 1985.

SUGAR LOAD OF ORAL LIQUID MEDICATIONS

on chronically ill children

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ABSTRACT

Children with congenital disorders or chronic illnesses receive additional sugar from oral liquid medications. The purpose of this study was to determine the history of oral liquid medication usage and the incidence of dental caries from birth until about 36 months of age in a population of 20 such children. A pattern appeared in the frequency and dispensing characteristics of the 44 different drugs used for these children. Parents gave daily doses of syrupy medications and elixirs 3-4 times a day and at least two of these doses were given just before or during a designated nap or bedtime. Parental concerns for the more serious medical condition naturally overrode the consideration of sound dental hygiene practices. In this study, diseased, extracted and filled primary teeth def(t) were recorded and the medicinal sugar load at the time of examination was calculated as well as the cumulative medicinal sugar load from birth. Average age on examination was 31 months and the median number of def(t) was eight. The mean total amount of additional sugar from oral liquid medications was 8,696 g and the maximum sugar consumed by one child was over 20 kg. Physicians currently have no choice but to prescribe certain medications that contain 30 to 70 per cent sugar for patients who are already at higher than usual risk for dental caries due to chronic illness.

SOMMAIRE

Les enfants souffrant de désordres congénitaux ou de maladies chroniques consomment un supplément de sucre à cause des remèdes liquides qu'ils doivent prendre par voie buccale. La présente étude a pour but de retracer l'histoire de ces remèdes, de leur consommation et de l'incidence de la carie dans un groupe de 20 enfants de leur naissance à l'âge de 36 mois. Pour les 44 différentes drogues données à ces enfants, on a pu relever des caractéristiques touchant la fréquence avec laquelle on les leur administre et la façon dont elles le sont. Trois ou quatre fois par jour, les parents donnent sous forme de sirop des doses de remède ou d'elixir et, au moins deux fois, c'est à l'heure d'une sieste ou du coucher. Naturellement, les parents s'inquiètent bien plus de la maladie de leurs enfants et c'est pourquoi ils oublient l'hygiène dentaire. Pour les fins de cette étude, on a relevé le nombre de dents temporaires cariées, extraites ou obturées (DCEO). De plus, on a calculé au moment de l'examen la quantité de sucre consommée en prenant des remèdes ainsi que la quantité cumulative de sucre consommée depuis la naissance. L'âge moyen des enfants au moment de l'examen était 31 mois et ils avaient en moyenne huit DCEO. Ils consommaient une moyenne de 8,696 grammes de sucre par les remèdes qu'ils prenaient sous forme liquide et la quantité maximum de sucre consommée par un enfant dépassait

les 20 kilogrammes. Actuellement, les médecins n'ont pas le choix et doivent prescrire des remèdes contenant de 30 à 70 pour cent de sucre aux patients qui, à cause de leur maladie chronique, sont plus susceptibles que les personnes ordinaires d'avoir des caries.

Introduction

While dental caries is a multifactorial disease, the role of fermentable carbohydrates in the production of caries is well documented. As a result, a number of authors have expressed their concerns that oral liquid medications contribute to the total sugar load and to the development of dental caries in children.¹⁻³ Young, chronically ill children receive a greater sugar load from oral liquid medications than do healthy children. They receive a variety of oral liquid medications on a routine and regular basis that healthy children do not. The purpose of this study was to determine the history of oral liquid medication usage and the incidence of dental caries in a group of 20 chronically ill children from birth until the time of pre-treatment examination. This study utilized retrospective data to shed light on the types, quantities, frequencies and dispensing characteristics of oral liquid medications dispensed to this population of chronically ill children.

TABLE I

Variety of oral liquid medications by medical condition and dispensing frequency

Patient	Medications	Diagnosis	Daily Frequency
1	9, 10, 12	Seizures	2-3
2	1, 13, 14, 15, 16	Infections	3-4
3	1, 2, 3, 4, 5, 6, 7	Cardiac	3
4	17, 18	Arthritis	3
5	4, 7, 19, 20	Cardiac	2-4
6	4, 7, 21	Cardiac	2-4
7	8, 9, 10, 11	Seizures	2-3
8	1, 22, 23, 24, 25, 26, 27	Spina bifida	2-3
9	1, 28, 31	Infections	3
10	29, 30, 31	Seizures	1-4
11	7, 19	Cardiac	3
12	6, 8, 9, 10, 12, 32, 33	Seizures	2-3
13	34	Seizures	1
14	8, 29, 35	Seizures	2-3
15	1, 6, 13, 34	Infections	2-3
16	1, 4, 6, 7, 19, 23, 25, 31, 36, 37	Cardiac	2-3
17	38	Cardiac	3
18	4, 26, 39, 40, 41, 42	Infections	2-3
19	8, 29, 30, 35	Seizures	1-3
20	8, 9, 32	Seizures	2-4

Medications listed by common name as sugar content varies with manufacturer. Amoxil, 1; Actifed, 2; Orciprenaline, 3; Aldactazide, 4; Pediazole, 5; Tempra, 6; Digoxin, 7; Phenobarbital, 8; Dilantin, 9; Tegretol, 10; Cholel, 11; Bactopen, 12; Ilosone, 13; Promatussin, 14; Trisulfaminic, 15; Erythrocin, 16; Aspirin, 17; Naprosyn, 18; Lasix, 19; Keflex, 20; Triaminic, 21; Probanthine, 22; Septra, 23; Macrodantin, 24; Alupent, 25; Colace, 26; Bactrim, 27; Catazym, 28; Rivotril, 29; Depakene, 30; Penicillin, 31; Primidone, 32; Rifampin, 33; Poly-Vi-Sol, 36; Mogadon, 37; Benadryl, 38; Atarax, 39; Fer-In-Sol, 40; Hismanal, 41; Seldane, 42; Semophylline, 43; Tri-Vi-Sol, 44.

TABLE II

Sugar content of 10 commonly prescribed oral liquid medications

Medication	Dosage form	Sugar content (gm./5 ml.)	Per cent by weight
Actifed	syrup	3.5	70
Dilantin	suspension	1.0	20
Ilosone	liquid	2.0	40
Penicillin	solution	4.0	80
Fer-in-sol	syrup	3.0	60
Phenobarbital	elixir	0.6	12
Erythrocin	solution	1.5	30
Benadryl	elixir	1.5	30
Tempra	drops	1.2	24
Tempra	syrup	3.0	60

Note: all sugar in these medications is supplied as sucrose. The usual dose is 5 ml. of liquid 2-4 times a day

Methods

The medical and dental charts of a randomly selected population of 20 chronically ill children who had rampant⁴ dental caries of the primary dentition sufficient to require treatment under general anaesthetic were reviewed. Chronically ill children under three years of age with a

def(t) (decayed, extracted or filled teeth) score *greater* than three are eligible for restorative treatment under general anesthesia. The number of decayed, extracted and filled teeth was recorded for each child. In this study, all teeth were in the decayed category as no previous treatment had been attempted. Winter's

criteria require at least two maxillary incisors be carious on their labial or lingual surfaces for the designation of rampant caries.⁴ All children in this study had rampant caries according to Winter's criteria.

Parents of the children were interviewed to verify and to provide details of the types, quantities, frequency of oral medication usage, mode of dispensing, sleep habits and oral hygiene procedures used. Parents provided information on the frequency that oral medication(s) were given daily. This information was combined with a review of both the medical history and the health records to determine the duration of usage for each medication. Oral liquid medications contain sugars in different quantities and their formulations were acquired for the calculation of sugar intake.^{1,5,6} From this information, quantities of sugar from oral medication were calculated for the daily dosage at the time of examination and for total medicinal sugar from birth to the time of examination. Graphs of the retrospective pattern of drug usage were drawn for each patient. Additional information on oral hygiene and drug dispensing practices was collected during the interviews.

Results

A total of 44 different medications were prescribed for the 20 children whose cases were reviewed. **Table I** shows the variety of oral liquid medications prescribed in this series according to diagnosis and daily dispensing frequency. **Table II** shows the sugar content of 10 representative oral medications used for these children. **Table III** shows the diagnosis, age at time of pre-treatment examination, number of decayed primary teeth and total supplemental sugar intake calculated from birth from the medical record of each child. The median age at the time of examination was 31 months. The mean daily supplemental sugar from oral medication at the time of examination was 17 g. The mean cumulative dose from birth until the time of examination was 8,696 g. **Fig. 1** illustrates the pattern of drug dosage for one representative child with congenital heart disease (patient 3) and one representative child with a seizure disorder secondary to hypoxia at birth (patient 7).

The median number of decayed teeth at the time of examination was eight, most often the four maxillary incisors and the two first and two second maxillary molars. In more serious cases, the next teeth to be affected were the lower first and second molars followed by the lower

incisors. The last teeth to be affected were usually the maxillary and mandibular canines.

Interviews with parents revealed that most children had regular mealtimes but two children went for an afternoon nap with a bottle of sugary drink and eight additional children were allowed to sleep with a sugary drink both in the afternoon and in the evening. Nineteen of the 20 children took naps of one to three-and-one-half hours' duration up to the time of dental treatment. A common pattern appeared in the frequency and dispensing characteristics of the medication (Table I); parents gave daily doses of syrupy oral medications and elixirs 3-4 times a day in drop form (spoon or syringe). At least two of these doses were given before or during a designated nap-time or bedtime, and in these cases, the medicine was deposited into the child's mouth, either palatal to the maxillary anterior teeth or sublingually, while the child was asleep. Other parents followed the medication with a soother dipped in honey or maple syrup. Tooth brushing or rinsing never followed oral medication dispensing in order to minimize disruption of the child's sleep pattern. Oral hygiene habits were often neglected in the light of the child's more serious medical problems. In other situations, parents noted that the child would brush his/her own teeth.

Discussion

Dental caries is a multifactorial disease that involves three major components, a susceptible tooth, bacteria, and bacterial substrate. Bacteria and bacterial substrate are both required to produce the pH drop at the tooth-plaque interface that either produces demineralization of the tooth or prevents its mineralization or remineralization. The mineralization-remineralization components, buffer capacity and flow rates of saliva are genetically determined but their relative contributions are difficult to identify.⁷ Genetic factors that determine caries susceptibility are generally believed to be overwhelmed by environmental factors such as dietary habits and the microbial ecology of the mouth.⁸ The bacterial components have been shown to vary among individuals and indeed, to be different in both number and type in patients who are caries-prone.⁹ Finally, the teeth themselves vary in their susceptibility to demineralization. Primary teeth are more prone to decay as they erupt partially calcified and have thinner enamel than permanent teeth.

The use of oral liquid medications is

TABLE III

Supplemental sugar by diagnosis and degree of dental disease.

Daily supplemental sugar is the sugar content of medications used daily at the time of examination. Total supplemental sugar is calculated from birth to age at examination

Patient	Diagnosis	Examination Age (months)	def(t)	Daily Supplemental Sugar (g)	Total Supplemental Sugar (g)
1	Seizures	31	8	9	4,014
2	Infections	31	6	19	16,903
3	Cardiac	19	5	25	8,049
4	Arthritis	19	4	41	10,742
5	Cardiac	31	16	26	11,836
6	Cardiac	31	11	15	7,193
7	Seizures	34	8	8	5,246
8	Spina bifida	51	10	21	8,566
9	Infections	25	11	16	7,793
10	Seizures	18	6	18	5,470
11	Cardiac	27	5	12	7,934
12	Seizures	43	10	9	7,776
13	Seizures	22	8	1	48
14	Seizures	47	14	9	12,845
15	Infections	27	4	35	20,482
16	Cardiac	25	7	46	15,413
17	Cardiac	40	13	15	10,950
18	Infections	31	4	22	6,903
19	Seizures	27	9	2	3,119
20	Seizures	36	6	1	2,645

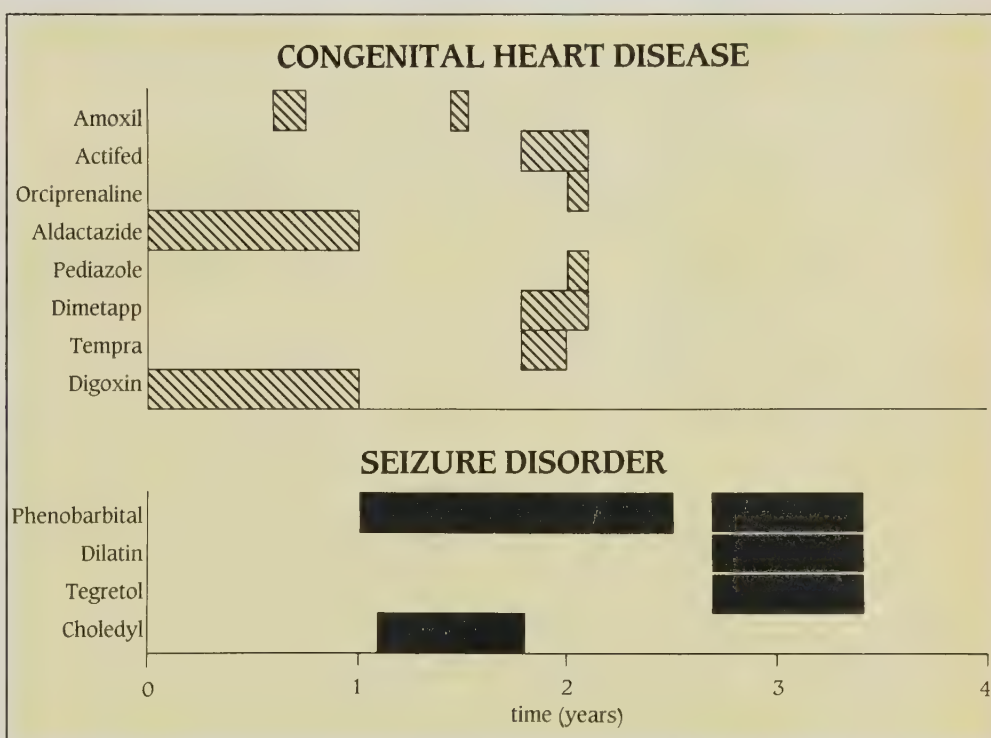


Fig. 1. Longitudinal pattern of medication usage for two representative children, one with congenital heart disease and the other with a seizure disorder. Total additional sugar, 8,049 and 5,247 g respectively. Dimetapp is the only oral liquid medication used for these children that did not contain sugar.

part of the daily routine for some chronically ill children.¹⁰ Although some medications such as antibiotics are used for a number of conditions, others are quite

specific in their application. For instance, in this study, children with congenital heart disease were often on lanoxin therapy and patients with seizure disorders

were often on dilantin, tegretol and/or phenobarbital. Pharmaceutical firms sweeten liquid preparations of drugs with fermentable carbohydrates such as sucrose, fructose and glucose to increase their palatability, add bulk and supposedly to increase compliance.

Oral liquid medications seem to have a composition and pattern of repetitive application that makes them particularly prone to the production of dental caries. First of all, oral liquid medications have been shown¹¹ to produce a drop in plaque pH sufficient to cause decalcification within 2-10 minutes following initial exposure to the teeth. In addition to the drop in plaque pH produced by bacterial metabolism of fermentable carbohydrates to exogenous acid by-products, there is a second pH-related factor. That is, many liquid medications have an endogenous low pH¹¹ that may itself contribute to demineralization or at least inhibit the mineralization-remineralization process in newly erupted teeth.

Finally, this study confirmed our suspicions that oral liquid medications were dispensed into the mouths of sleeping children. Parents of sick children are loath to disrupt their children's sleep habits to give them oral medications. This is reasonable but particularly dangerous for the teeth, as salivary flows are at their lowest during sleep.¹² It has been shown^{13,14} that decreased salivary flow leads to changes in plaque pH that produce both a lower pH and longer duration within the pH zone that produces decalcification. Indeed, it has also been suggested that salivary sucrose concentration and plaque thickness play a combined role in the determination of susceptibility versus resistance to caries.¹⁵ There remains one final issue in the salivary clearance/plaque pH component of dental caries. That is the effect of salivary sucrose concentration on the flow rate of saliva. There have been suggestions from representatives of the pharmaceutical industry that it might be possible to reduce the concentration of sugar in some pediatric oral medications. A recent study¹⁶ clearly shows that high sucrose concentrations produce high salivary flow rates and that these rates (and oral clearance) decrease as the sucrose concentration decreases. This means that reduction of the concentration of sugar will merely decrease the rate of oral clearance by saliva and that as flows decrease, the pH drop will be maintained due to decreased protective effects of saliva.

A number of steps may be taken by physicians and parents of children who must take oral liquid medications during

the early years. The pattern, and quite likely the degree of decay, found in these children is similar to that found in children who snack during their waking hours on a bottle that contains fermentable carbohydrates such as formula or apple juice. First of all, physicians can arrange an early parental consultation with a paediatric dentist or general dentist. This will get oral hygiene measures underway as soon as the first incisors erupt. When the child is awake, the teeth should be brushed before the medication is given and a clearing drink of water offered after the medication. If the teeth are brushed twice a day when the child is awake, the teeth will have less adherent plaque if the medication must be given when the child is asleep. A topical fluoride gel may be used twice a week under the direction of the dentist, as total fluoride from all sources must be considered before supplementary fluoride is prescribed.

Conclusion

This survey shows the large amount of sugars that are dispensed in the form of oral liquid medication to chronically ill children. An average of over 8.5 kg in unnecessary sugar supplied 3-4 times a day, often at nap times, must surely contribute to the rampant dental caries found in these children. Physicians and dentists need a range of common pediatric medications that do not contain any sugar. It is simply not satisfactory to reduce the quantities of sugar in current medications. Neither dentists, parents nor physicians want chronically ill children to be burdened with extensive dental rehabilitation of the primary dentition when it is preventable. Δ

This paper was presented as an abstract at the 66th General Session IADR, Montréal, 1988.

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FIRST AID TIP



HYPOTHERMIA

Shivering, slurred speech, stumbling and drowsiness after cold exposure are indications of hypothermia. Condition is severe when shivering stops. Unconsciousness and stopped breathing may follow. • Remove gently to shelter. Movement or rough handling can upset heart rhythm • Remove wet clothing; wrap in warm covers • Rewarm neck, chest, abdomen and groin — but not extremities. Apply direct body heat or safe heating devices • Give warm drinks if conscious • Monitor breathing; give artificial respiration if needed • Call for medical aid or transport gently.



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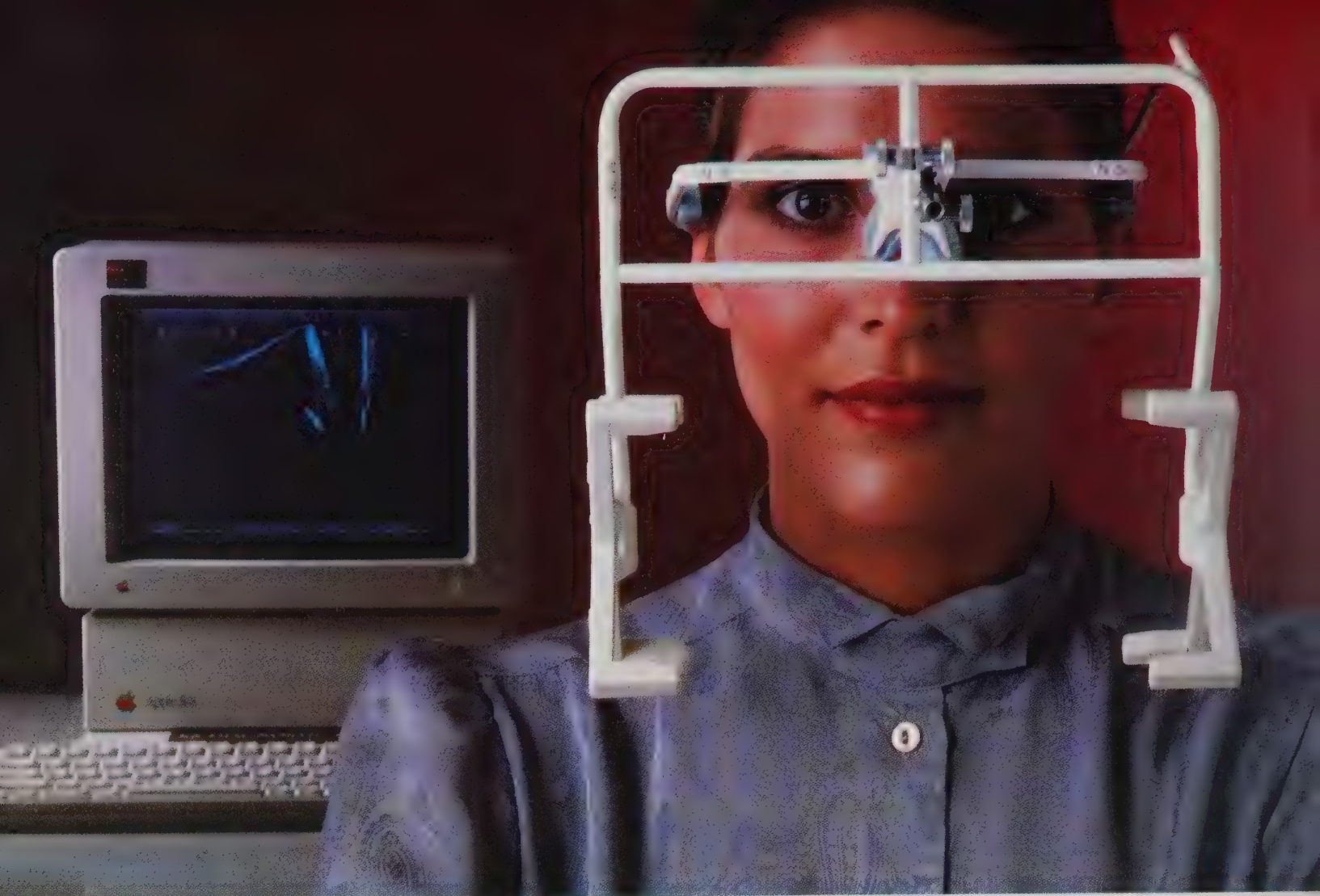
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The use of

NUCLEAR MEDICINE

in the diagnosis of Paget's Disease of the mandible

Report of a case

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This article presents a literature review of the diagnosis and treatment of Paget's disease, as well as a case report of mandibular Paget's disease diagnosed solely with the aid of a 99-m-technetium-methyldiphosphonate nuclear medicine bone scan.

ABSTRACT

Traditionally, incisional bone biopsy has been required in order to establish and confirm a diagnosis of Paget's disease (Osteitis deformans) of the mandible and/or maxilla. This article presents a case report of a patient who refused such biopsy. The patient was referred with a three year history of intermittent mandibular pain, accompanied by occasional swelling of the adjacent soft tissues. Although several health professionals had been consulted, no diagnosis had been established. Furthermore, an incisional biopsy had apparently been performed in the area of the left mandible, as reported by the patient, with no conclusive results. On examination, the patient refused all proposed repeat biopsy, but did agree to a full laboratory workup which included: routine blood studies; nuclear medicine bone studies of total body regions including the head and neck, followed by sialography of the sub-mandibular salivary glands. A definitive diagnosis of Paget's disease was reported on 99-m-MDP-technetium bone scans of the mandible. The patient was subsequently treated with the appropriate medication which resulted in a remission of the disease over the three year follow-up period. The histopathological diagnosis was never confirmed because of the patient's repeated refusal to be biopsied.

SOMMAIRE

Ordinairement, il faut opérer une biopsie osseuse pour établir et confirmer le diagnostic lorsqu'on soupçonne qu'une maladie de Paget (ostéite déformante)

affecte la mandibule ou le maxillaire. Voici le cas d'un patient qui refusait une telle biopsie. Celui-ci souffrait depuis trois ans de douleurs intermittentes à la mandibule, accompagnées occasionnellement d'enflures des tissus mous adjacents. Bien qu'il eût consulté plusieurs professionnels de la santé, aucun diagnostic n'avait été établi. De plus, il avait déjà fait l'objet d'une biopsie osseuse à la mandibule gauche, prétendait-il, mais celle-ci n'avait donné aucun résultat concluant. À l'examen, le patient a refusé toute autre biopsie proposée, mais il a bien voulu se soumettre à toute une batterie de tests de laboratoire, à savoir: des études sanguines de routine; des études osseuses, par médecine nucléaire, de toutes les parties du corps, y compris la tête et le cou, suivies par une sialographie des glandes salivaires sous-mandibulaires. Après avoir soumis les os de la mandibule à des scintigraphies au 99-m-MDP-technetium, il était clair que le patient était atteint de la maladie de Paget. On l'a donc traité avec les médicaments appropriés et, durant les trois années suivantes, le mal s'est atténué. Toutefois, le diagnostic histopathologique n'a jamais été confirmé parce que le patient a continué de refuser toute biopsie.

Introduction

Paget's disease (Osteitis deformans) is a bone disease of unknown etiology which causes a large amount of spontaneous bone resorption and repair.^{1,2,3,4,5} Such bone healing occurs in a haphazard fashion resulting in abnormalities of bony architecture.^{6,7,8,9} Paget's disease has been reported to affect up to 30 per cent

of the population older than 50 years¹ and 10 per cent of the population beyond 60 years of age.^{2,4} Males are slightly more often affected than females.^{3,4}

Initially, the disease is asymptomatic and may be accidentally discovered on routine examination, or the patient may initially complain of facial and/or cervical pain. With time, moreover, the condition may become extremely painful, with periodic remissions. Other complaints may include: migraine headaches, loss of vision, decrease in hearing, facial paralysis and vertigo. As the disease progresses, symptoms worsen because of the compression of soft tissue structures by the abnormal enlargement of pagetoid bone.^{1,2,3} Osteosarcoma has been reported in about 1 per cent of all cases of Paget's disease.^{1,2}

According to the present protocol, functional inquiry, clinical examination, radiographs and incisional bone biopsy are all required in order to establish and confirm a definitive diagnosis of Paget's disease of the mandible and/or maxilla. In the present article, consequent to the adamant refusal of surgical exploration, we present a case of Paget's disease diagnosed with the use of functional inquiry and nuclear medicine bone scanning techniques only. Subsequent pharmacological treatment resulted in a marked improvement of the patient's complaints of severe bone pain and occasional jaw swelling.

Case Report

A sixty-three year old Caucasian female was referred to the Oral and Maxillofacial Surgery Service of St. Mary's Hospital in Montréal, by her physician. Her chief complaint was one of a three year history

TABLE I

Laboratory studies

Date	Serum calcium (8.5-10.5 mg/dl)	Serum phosphorous (2.5-4.5 mg/dl)	Alkaline diphosphatase 106 IU/L
Aug, 1984*	9.1	3.7	85
Nov, 1984†	9.7	4.5	75
Mar, 1985†	9.9	4.4	69
June, 1985**	9.7	3.4	83
Sept, 1985**	9.7	3.6	73
June, 1986††	9.9	4.4	96
June, 1987†††	9.2	4.2	106

*On initial testing, prior to treatment

†During initial treatment period

**After initial treatment period

††Two years following initial presentation

†††Three years following initial presentation



Fig. 1. Pre-treatment panoramic radiograph.

of intermittent, intense mandibular pain, particularly around the symphysis, with episodes of swelling of the submandibular soft tissues. This swelling usually lasted three to five days with subsequent spontaneous remission, only to reappear two to three weeks later. The patient had sought help from a variety of dentists and her family physician to no avail. One clinician performed an incisional left mandibular biopsy, but the diagnosis remained undetermined. Analgesics were prescribed for the patient, and nonsteroidal anti-inflammatory medications with minimal relief. No other abnormalities were reported or discovered.

On examination, the patient presented a healthy habitus, looking younger than her stated age. Extra-orally, there was no evidence of muscle spasm or painful trigger points, no TMJ crepitus or pain, no limited jaw opening. A firm swelling was noted on palpation of the submandibular soft tissues bilaterally which felt warm to the touch. Intra-orally, the edentulous ridges and buccal mucosa appeared

healthy except for a slight elevation of the soft tissues of the floor of the mouth bilaterally. There was no evidence on further examination of masticatory muscle spasm, exostoses, traumatic lesions. The saliva was thick and the soft tissues appeared dry. The patient stated that she could only wear the maxillary denture because wearing the lower denture caused her mucosa to become painful.

Laboratory workup included: SMA 16, CBC, WBC with differential, ESR, PT, PTT, platelets, panoramic radiograph, 99-m-MDP-technetium and 67-gallium citrate bone scans of the head, neck and total body followed by sialography of both submandibular glands. All laboratory results were within normal limits (Table 1). The panoramic radiograph revealed no bony abnormalities other than a mandibular alveolar atrophy post-extraction (Fig. 1). The sialography was normal.

A differential diagnosis was established as follows: chronic osteomyelitis, hyperparathyroidism, multiple myeloma, Paget's

disease, Sjögren's disease, lymphoma. The 67-gallium-citrate scans were negative. The 99-m-MDP-technetium bone scans revealed some degenerative joint disease in the area of the third to fifth lumbar vertebrae, as well as a definitive diagnosis of Paget's disease of the mandible only (Fig. 2, 3, 4, 5). In order to corroborate this finding, we recommended an incisional bone biopsy of the mandible as well as mandibular tomography. As could be expected, the radiologist did not recommend the tomography because of the concrete evidence of Paget's disease on review of the technetium scans and the needless exposure of the patient to further radiation. Furthermore, the patient refused all biopsy of the mandible because of the previous traumatic experience.

The patient was subsequently sent back to her referring physician with a diagnosis of mandibular Paget's disease. In light of the patient's classical presentation and pain complaints as well as the classical technetium scanning findings in such a case, it was decided to treat the patient for Paget's disease even in the absence of histopathological diagnosis. Treatment consisted of the periodic administration of Disodium Etidronate, Calcitonin and non-steroidal anti-inflammatory analgesics. The patient's progress was evaluated both subjectively and objectively, including periodic serum and urine laboratory testing. Within the first year, the patient's complaints of pain regressed significantly. The patient actually claimed that the pain was replaced by a "burning sensation" of the mandible. Serum calcium, phosphorous and alkaline diphosphatase were controlled with daily oral doses of Calcitonin. Nuclear medicine technetium bone scans were repeated at six month intervals for two years and yearly thereafter (Figs. 6, 7, 8, 9, 10, 11). It is now three years since the patient's initial presentation to our Service and six years following initial complaints of mandibular pain, now well controlled on oral medication, but suffering the occasional pagetoid flareup, which is also well controlled pharmacologically.

Literature Review

Paget's Disease

Paget's disease evolves gradually over a number of years. The most common complication is fracture of the bulky pagetoid bone because of its abnormal malleability and softness.^{1,3} Healing of such bone fractures occurs normally although the bony callus is abundant. One author suggests that Paget's disease may actually be a hormone-sensitive benign tumor of

bone.¹⁰ The most serious complication is the development of Osteosarcoma which occurs in about 1 per cent of all cases of Paget's disease and in approximately 20 per cent of old fractures of pagetoid bone.^{1,3} Shafer estimated that the risk of developing Osteosarcoma in a person aged 40 years or more and suffering from Paget's disease is 30 times greater than that in a healthy person.² Another eventual systemic complication is cardiac insufficiency.

This disease obviously affects alveolar bone detrimentally. Therefore, a patient suffering from Paget's disease presenting with a dental infection must be treated with antibiotics prior to, during and after surgical treatment. Proper surgical and suture techniques are also very important in order to avoid the development of an osteitis or osteomyelitis post-operatively.

Classically, in Paget's disease, serum calcium and phosphorous levels are normal. However, the serum alkaline diphosphatase (ADP) is very high, as are the urinary hydroxyproline and urinary calcium.^{2,5} The extent of these abnormal test values depends on the severity of the existing disease. The severity itself depends on whether there is active resorption of healthy bone, active formation of unhealthy pagetoid bone or both, or whether there is an altogether lack of activity.

Initially, there is osseous resorption with increased vascularity. This first "destructive phase" or "Phase I" of Paget's disease is characterized by a slight hypercalcemia. In the second "mixed phase" or "Phase II", both resorption of normal bone and formation of abnormal pagetoid bone occur simultaneously, and are in equilibrium. In this phase, serum calcium and phosphorous values are obviously within normal limits. During the third "formative phase" or "Phase III", there is much less resorption; however, abnormal bone formation is prolonged in this the most lengthy of the three phases. In this stage, serum alkaline diphosphatase is very high. In our case, serum calcium, urinary calcium, serum phosphorous, urinary hydroxyproline as well as serum alkaline diphosphatase were all within normal limits, which would indicate either an early Phase I (destructive phase) or a Phase II (mixed phase).

Pain due to Paget's disease is initially well controlled with the use of analgesics and nonsteroidal anti-inflammatory medication. In order to stabilize calcium metabolism, the patient eventually receives Calcitonin*, a medication which reduces osteoclastic activity, as the dis-

ease progresses. The effect of the systemic administration of Calcitonin is dramatic, and may, in some cases lead to a complete relief from pain with a resultant remission of the disease.⁶ The habitual starting dose is 100 international units per day subcutaneously. It is imperative that a test dose of 1 unit be given subcutaneously before treatment in order to rule out severe systemic reactions. Treatment is satisfactory if there is an overall decrease in serum alkaline diphosphatase and 24 hour urine hydroxyproline levels over several months of treatment.

If there is a good response to the medication, with relief of symptoms, the dose is decreased to 50 units or less per day subcutaneously and associated analgesic medication is prescribed. In complete remission, the medication may be stopped for several months, to be restarted if symptoms return. Approximately one third of patients become resistant to Calcitonin, and doses beyond 100 units per day offer little advantage symptomatically. Secondary effects include: nausea, vomiting, anorexia, a facial "flush" one to two hours after the injection, as well as cutaneous lesions. These secondary effects, however, are rarely if ever severe enough to warrant cessation of treatment.

In the more advanced stages or in cases with severe pain, Disodium Etidronate** is prescribed. Disodium Etidronate is a member of the diphosphanate family of drugs which are considered to be stable analogues of pyrophosphate. The latter inhibits the resorption of and formation of hydroxyapatite crystals, as well as directly interferes with osteoclastic function. Disodium Etidronate is the disodium base of diphosphuric acid. A dose of 5 mg/kg of body weight for six months relieves pain, lowers the serum level of alkaline diphosphatase and improves the histologic lesions of bone. A higher dose will result in osteomalacia. Secondary effects include mainly a mild diarrhea. This medication diminishes the level of serum alkaline diphosphatase and the excretion in the urine of hydroxyproline. Disodium Etidronate is administered orally for a period of six months in doses of 5 to 10 mg/Kg/24 hour period, and this is followed by cessation of the drug for the following six month interval. Prior to and after the administration of this drug, one must follow the patient for possible relapses by periodic evaluation of laboratory serum and urine results, as well as renewal of pain complaints.

*Calcimar® (Salmon Calcitonin, Rorer Canada Inc., Bramalea, Ontario)

**Didronel® (Proctor & Gamble Inc., U.S.A.)

Mithramycin* is a potent antineoplastic agent which is reserved for those cases of Paget's disease which are resistant to the above-mentioned treatments. This medication is administered slowly and intravenously at a dose of 25 µg/kg once or twice weekly. This treatment rapidly relieves the patient's pain, corrects the biochemical abnormalities and reduces the cardiac insufficiency of Paget's disease. However, the toxicity of this drug restricts its use to the most resistant, painful cases. Mithramycin inhibits DNA-dependent or DNA-directed RNA synthesis by binding to DNA in the presence of magnesium or other divalent cations. It seems, therefore, to inhibit the effect of osteoclasts. This drug is effective only in the short term treatment of severe cases of Paget's disease due to its cytotoxicity. Furthermore, patients must be carefully monitored for the occurrence of severe thrombocytopenia.

*Mithracin® (Pfizer Inc., New York, U.S.A.)

Discussion

The radiographic changes in Paget's disease depend upon the stages of the disease. During the "destructive phase" (Phase I), radiolucent areas may be visible as the disease progresses because of the resorptive process. During the "formative phase" (Phase III), there is active formation of Pagetoid bone without the active resorptive process. This results in the appearance of radiopaque areas on panoramic radiographs. In this case, the radiographic film was initially interpreted as being normal which might indicate an incipient Phase II disease process with resorption being balanced by formation. On the other hand, the lack of radiographic changes might also indicate a very incipient Phase I disease process with no significant "resorptive" patterns visible radiographically as of yet. For these reasons and the fact that no diagnosis had yet been established, it was decided to obtain a nuclear medicine bone scan of the mandible. Such a scan consists of an intravenous injection of a labelled radioactive isotope of an element, for example, 99-m-MDP-Tc* or 67-Ga-citrate†. This isotope is then visualized a few hours following injection in order to evaluate the region in question. It has been estimated that 50 per cent to 75 per cent of the cancellous bone must be path-

*99=the sum of the protons and neutrons of technetium; m=metastable; Tc=technetium.

†67=the sum of the protons and neutrons of gallium; citrate=the citrated form of gallium; Ga=gallium.



Fig. 2. Pre-treatment 99m-MDP-technetium mandibular bone scan, frontal view. The isotope uptake is especially intense in the area of the right mandible.

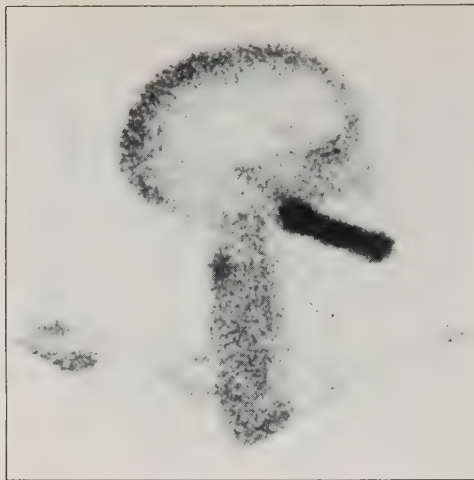


Fig. 3. Pre-treatment bone scan of the right mandible.

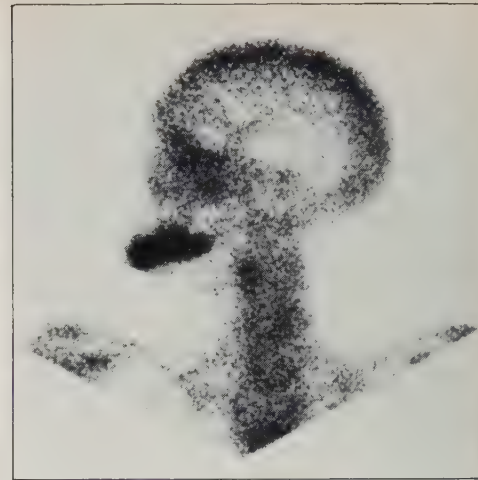


Fig. 4. Pre-treatment bone scan of the left mandible. The uptake is not as intense in the areas of the left angle of the mandible, the ramus and the temporomandibular joint.

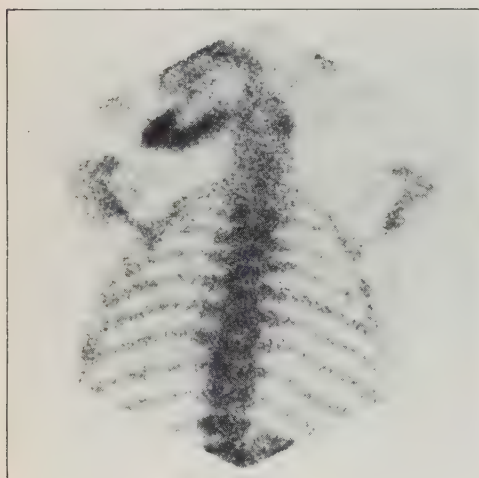


Fig. 5. An oblique view of the pre-treatment bone scan of the mandible. Once again, note that the isotope uptake is not as intense in the areas of the left angle of the mandible, the ramus and the temporomandibular joint as compared to the right mandible.

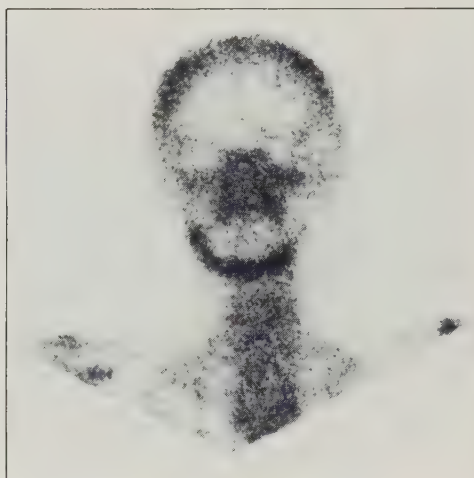


Fig. 6. Two years following treatment. 99m-MDP-technetium bone scan of the mandible. Frontal view. Note the much decreased uptake of the radionuclide element. This correlated well with the patient's subjective reports of almost complete relief from pain complaints.

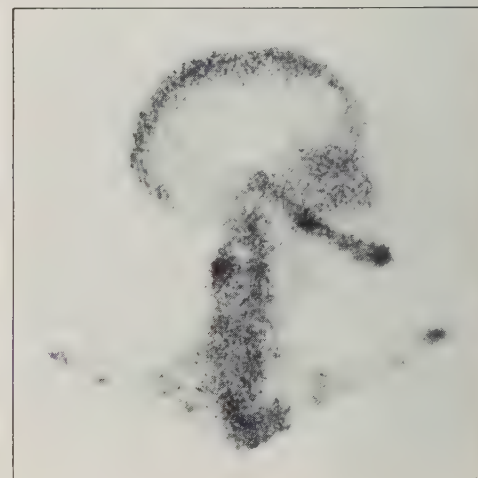


Fig. 7. Two years after treatment. 99m-MDP-technetium scan of the the mandible. Right mandibular view.

ologically involved before the bony disease resorptive process may be visualized radiographically.^{4,13} On the other hand, the nuclear bone scan technique is very sensitive to the earliest signs of bone pathosis. Presently, the 99-m-MDP-Tc radioisotope is the preferred element for the early detection of certain osseous disease states. An infection or other neoplastic resorptive process does not, however, appear on such a scan. This labelled radioisotope becomes incorporated in the developing hydroxyapatite crystals. Furthermore, this osteoblastic region is very vascular, which also increases the amount of labelled radioisotope in the area. Such bone scanning, therefore, is strongly recommended in the diagnosis of Paget's disease. This is performed by the injection of 18 to 20 millicuries of 99-m-MDP-Tc (in a methyl-diphosphonate base) intravenously. After

a two hour waiting period, scintillation camera studies are carried out in anterior as well as right and left lateral views of the head and neck. A wide field focus collimator is used. In order to arrive at a proper scintillation contrast, the irradiation counts should number over 300,000 for the mandible.

Areas which show "uptake" of the labelled radionuclide are termed "hot". In Paget's disease, such a scan is well indicated, especially for Phase II (mixed) and III (formative), since the amount of "captured" radioisotope depends on the osteoblastic activity of the abnormally forming pagetoid bone.¹⁰ According to Miller,¹⁰ the mixed phase of the disease, involving both osteolysis and osteosclerosis, was the most common form of the disease in their study of Paget's disease of bone. The count rate over bone involved with Paget's can be three to five

times greater than that of non-pagetoid bone. The distinction between pagetoid bone and normal bone is apparently easily made within a relatively short period of time following the injection of 99-m-MDP-technetium. Moreover, the degree of "uptake" depends upon the severity (and longevity) of the disease. Therefore, in Phase I (resorptive-lytic phase), there is increased radioactive uptake at the advancing margin of the lesion while the central part of the resorbed bone appears to have lower radioactive uptake. However, in Phase II (mixed) there is a considerable difference with many areas of increased uptake throughout the bony lesion.

Conclusion

We have presented an unusual case of a three year history of severe, intermittent mandibular pain and submandibular soft tissue swelling. Because of the patient's previous experience, any suggestion of

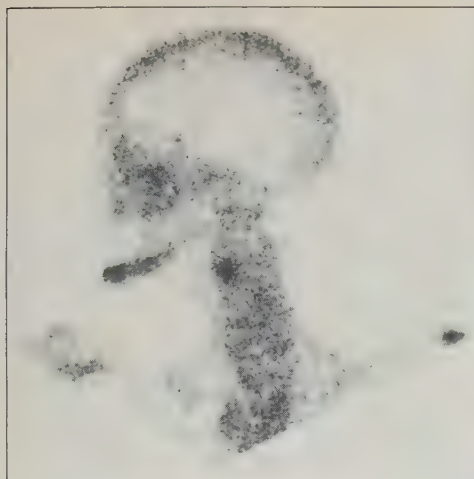


Fig. 8. View of left mandibular bone scan two years after treatment.

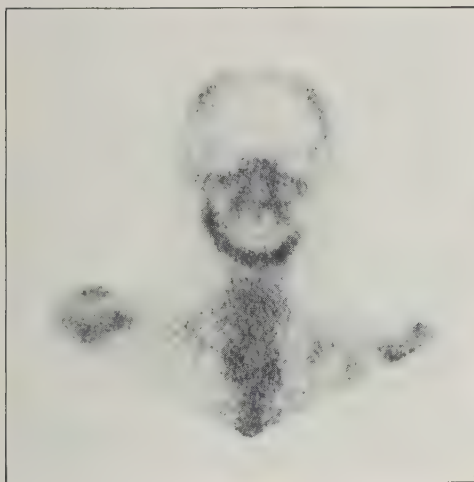


Fig. 9. Frontal view of bone scan of the mandible three years after treatment. Results are stable as compared to the scans of two years after therapy, correlating with clinical remission of the disease. Although regression of pain is achieved, there remains some isotope uptake indicating underlying pathosis.

intraoral soft or hard tissue biopsy was refused. Following laboratory investigation, a 99-m-technetium-methyldiphosphonate bone scan of the mandible revealed definitive lesions of early Paget's disease of the mandible. Although the diagnosis was never confirmed with incisional bone biopsy and all serum and urine laboratory study results were within normal limits, it was felt that this case presented typical scans of mandibular Paget's disease. The patient was subsequently treated with Didronel, Calcitonin and nonsteroidal anti-inflammatory agents with almost total relief from pain. It is hoped that, wherever possible, nuclear medicine bone scanning with 99-m-technetium-methyldiphosphonate will become a primary diagnostic tool in establishing and confirming a diagnosis of unifocal and/or multifocal Paget's disease. Its limited, reversible invasiveness and its low radiation dose make it more

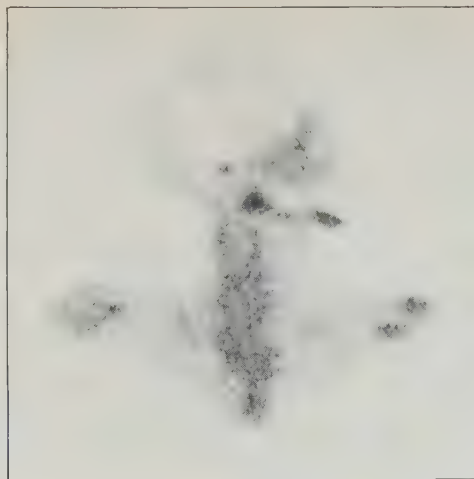


Fig. 10. View of bone scan of the right mandible three years after initial presentation.

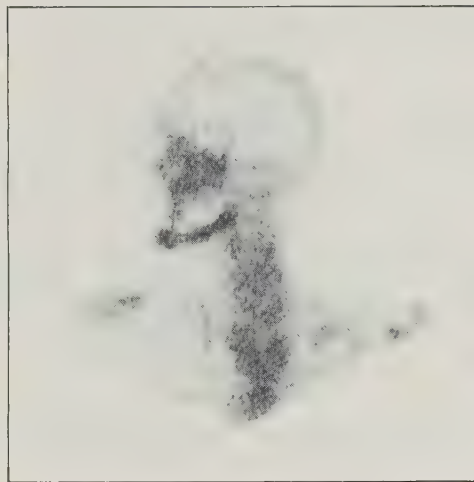


Fig. 11. View of bone scan of the left mandible three years after initial presentation.

attractive than incisional bone biopsy and tomography. The amount of uptake of the radioactively-labelled element is directly proportional to the degree of regional vascularity as well as the degree of osteoblastic activity present in the formation of abnormal pagetoid bone. Therefore, early Phase I Paget's disease does not show up as remarkably on scanning as do Phases II and III. Nuclear medicine diagnosis, however, is possible at all phases of the disease.

It is strongly felt that although the cost and availability may be definite limiting factors, the advantages in precision of diagnosis, minimal reversible invasiveness and evaluation of treatment progress make this technique invaluable. Δ

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Special thanks to Dr. A. Gutkowski (Allergy and Immunology), Dr. Robert Lisbona (Nuclear Medicine) and Dr. Monique Michaud (Oral Medicine) for their invaluable contributions, and to Mrs. Cheryl Simmons (Nuclear Medicine) for her technical assistance throughout the preparation of this article. Bone scanning was performed in the Department of Nuclear Medicine of St. Mary's Hospital, Montreal. Special thanks as well to Tony and Chuck of the Audio-visual and photography department of St. Mary's Hospital.

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SULFITE, ASTHMA AND VASOCONSTRICTORS

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ABSTRACT

The use of vasoconstrictors in dentistry has always been a topic of controversy for the medically compromised patient. Over the past few years, dentists have been warned not to use local anesthetics with vasoconstrictors in asthmatic patients. In this article, the authors question the rationale behind these recommendations and explain why the warning should be restricted to steroid-dependent asthmatic patients.

SOMMAIRE

En médecine dentaire, l'usage des vasoconstricteurs a toujours été un sujet de controverse chez le patient médicalement compromis. Au cours des dernières années, les dentistes ont été invités à ne pas utiliser de solutions anesthésiques avec vasoconstricteur chez les patients asthmatiques. Dans cet article, les auteurs s'interrogent sur le bien-fondé de ces recommandations et expliquent pourquoi la mise en garde devrait se restreindre aux asthmatiques cortico-dépendants.

Recently, several reports and editorials have warned the dental profession of sulfite sensitivity and practitioners have been urged not to use local anesthetics with epinephrine or levonordefrin in patients who have a history of asthma or an indication of

sulfite sensitivity.¹⁻³ Local anesthetics used in dentistry containing vasoconstrictors also contain sodium metabisulfite (0.01-1.0 mg/mL),⁴ an antioxidant agent of the sulfite group, which is considered a highly allergenic substance for certain individuals.

Sulfites are widely used in the food and beverage industry as preservatives to reduce or prevent microbial spoilage of food or inhibit undesirable organism reactions during fermentation. Fresh and dried fruits and vegetables, shellfish, beer and wine currently contain sulfites.^{4,5} Adverse reactions are most likely to occur in individuals ingesting a restaurant meal, in which sulfite concentration could easily reach 25-200 mg.⁴ In most instances, reactions to ingested alimentary sulfites are considered serious and sulfite-sensitive patients could develop severe and prolonged asthmatic crisis or anaphylactoid shock.^{5,6} Since a threshold sensitivity level to sulfite has been reported between 0.6 and 0.9 mg⁷ and since this level can be easily attained by injecting 1-2 mL of local anesthetic, warnings on the use of a local anesthetic with vasoconstrictor in asthmatic patients have been widely published. In view of all the implications of such guidelines, we will review recent data on sulfite sensitivity to find if there is conclusive evidence to support these recommendations.

In a recent report by Bush et al.,⁸ sulfite sensitivity has been estimated at 3.9 per cent among asthmatic patients. This represents a two-fold decrease of what has been previously reported in the literature,⁹ and could even be an over-estimation of the real prevalence of sulfite

sensitivity in the asthmatic population as a whole. In the quoted study,⁸ 40 per cent of the 203 patients were steroid-dependent asthmatics and thus considered to have severe asthma, but such a high proportion would be unlikely in the general asthmatic population. Furthermore, Bush et al.⁸ estimated a sulfite sensitivity prevalence of 8.4 per cent in the steroid dependent group, in comparison with a 0.8 per cent prevalence in the non-steroid dependent group. According to their data, the risk of sulfite sensitivity in non-steroid dependent asthmatic patients (which represents the vast majority of the total asthmatic population) appears to be very low.

On the other hand, results of a study published by Goldfarb and Simon¹⁰ in 1984 may indicate a sulfite sensitivity threshold level higher than 0.9 mg. In their study, six highly sulfite-sensitive asthmatic patients failed to react to a subcutaneous challenge test with up to 10 mg of sulfite. In dentistry, it would take 20 c.c. of local anesthetic with vasoconstrictor 1:100,000 containing sodium metabisulfite at a concentration of 0.5 mg/mL to equal that amount. As recently mentioned by Simon,⁴ some highly sulfite-sensitive asthmatic patients will react to challenge tests with doses smaller than 10 mg but they probably represent only a small proportion of the highly sulfite-sensitive population. We must therefore question the validity of the 0.9 mg sulfite-sensitivity threshold level established by Huang and Fraser⁷ from a case report in 1984. Despite all the facts presented by the authors, a diagnosis of sulfite sensitivity in that particular case

has not been proven without any reasonable doubt. Such a diagnosis should have been confirmed by appropriate challenge tests,¹¹ which, unfortunately, were not conducted or reported by the authors. In addition, the symptoms described in their report do not seem compatible with a true allergic reaction to sulfite. The subject experienced a palmar and plantar pruritis, generalized urticaria, facial and laryngeal edema, severe abdominal pain and fulminating diarrhea, which were all attributed to alimentary sulfite ingestion. A threshold level of sensitivity of 0.6 to 0.9 mg was then established when they observed similar symptoms following an injection of 1.8 c.c. of xylocaine 1:100,000 containing 0.5 mg/mL of sodium bisulfite. The absence of asthmatic reaction and the presence of urticaria and angioedema in this case make the original diagnosis doubtful.

In fact, allergic reactions to sulfite are extremely rare in non-asthmatic patients, and yet so far in the medical literature there has been no demonstration of a casual relationship between sulfite sensitivity and the appearance of urticaria and angioedema. Stevenson and Simon⁵ challenged four patients who were hypersensitive to sulfite and they observed generalized flush, faintness, weakness, chest tightness, asthma, cyanosis and loss of consciousness. In a review article by Simon,⁴ no conclusive evidence of a relationship between urticaria, angioedema and hypersensitive reaction to sulfite was highlighted. Reactions mentioned by Huang and Fraser,⁷ he believed, are not immunologically mediated but could result from an important vagal stimulation produced by stomach distension following accumulation of a large volume of sulfur dioxide. The vagal stimulation could then lead to cholinergic urticaria, abdominal pain and diarrhea, which represent only a few of the symptoms related to possible vagal stimulation.

Because of the large amount of sulfite present in our environment and an estimated subcutaneous threshold level value of at least 10 mg for most of the sulfite-sensitive subjects, the likelihood of a patient developing a first major reaction following a dental injection is probably very small. Most of the sensitive patients would by then be previously identified, thus significantly decreasing the risk of a complication following the use of a vasoconstrictor. On this particular issue, it is interesting to quote Simon, who is one of the leading authorities on sulfite immunology: "I regularly prescribe epinephrine for sulfite-sensitive asthmatics to carry and use despite the sulfite preservation

within", and he goes on to say "local anesthetics contain only up to 2 mg/mL of sulfite and therefore not even the most sensitive individuals would react to usual doses."⁴

Despite recent warning, we feel there is not enough evidence to banish the use of a vasoconstrictor in asthmatic patients. There is a substantial amount of evidence, however, that local anesthetics with a vasoconstrictor can be used safely in most asthmatic patients and particularly in non-steroid dependent patients, who represent the vast majority of the total asthmatic population. As mentioned previously, this attitude seems justified since controlled challenge tests with dosage up to 10 mg of sulfite administered subcutaneously have been carried out successfully in highly sulfite-sensitive patients and since there is only an 0.8 per cent estimated prevalence of sulfite sensitivity in the non steroid-dependent group. On the other hand, because intravascular injection is a risk during anesthetic blocks or infiltrations, we recommend the use of a local anesthetic without vasoconstrictor in steroid-dependent asthmatic patients until we know more about sulfite sensitivity threshold levels in that particular group of patients. Finally, vasoconstrictors remain strictly contraindicated when there is a proven allergy or a possible history of sulfite sensitivity. Δ

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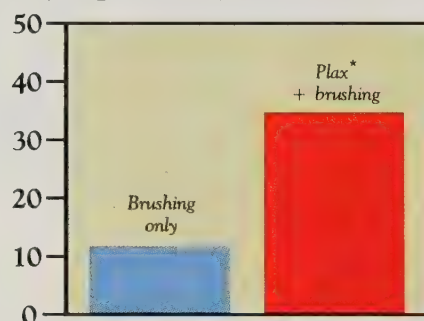
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Jeannine Sévigny, PhD**

RÉSUMÉ

Dans les études épidémiologiques en santé dentaire chez les enfants, l'évaluation de la qualité nutritionnelle et des fréquences de consommation alimentaire dépend, entre autres choses de la validité interne de la méthode de collecte des informations. L'objectif de la présente recherche est de comparer les fréquences moyennes de consommation aux repas et aux collations de 21 catégories d'aliments, calculées pour deux jours de semaine à celles calculées pour une journée de fin de semaine.

Un journal alimentaire de trois jours incluant une journée de fin de semaine a été complété par 549 enfants de 11 ans aidés de leurs parents. Pour chaque paire de fréquences alimentaires observées, un test t de Student a été effectué. Les résultats ont démontré qu'en comparant deux jours de semaine à une journée de fin de semaine, des fréquences moyennes significativement différentes ($p < 0,05$) ont été

observées pour les boissons gazeuses, les pâtisseries, le lait et les légumes. De plus, les jus de fruits, les céréales à grains entiers, les fruits frais, le lait, les légumes verts et jaunes sont consommés significativement moins souvent aux repas durant les fins de semaine. Les aliments consommés aux collations durant la fin de semaine sont généralement plus salés ou plus sucrés. De même, les aliments habituellement considérés comme plus nutritifs sont moins consommés durant la fin de semaine. Les différences obtenues entre les fréquences alimentaires justifient l'inclusion d'une journée de fin de semaine dans un journal alimentaire de trois jours pour éviter de surestimer la consommation de certains aliments et la qualité nutritionnelle de l'alimentation des enfants de cet âge.

Mots Clés:

Journal alimentaire, fréquence de consommation, relevé alimentaire, habitudes alimentaires.

ABSTRACT

The accurate assessment of nutritional quality or of food eating frequency in epidemiologic studies depends among other things on the internal validity of the method. The purpose of this study was to compare the mean food eating frequencies at meals and between-meals of 20 specific food items obtained from a two-weekday-diet record to those obtained from one weekend-day.

A three-day-diet record including a weekend-day was completed by 549 eleven-year old children with the help of their parents. For each pair of food frequencies observed, a Student t test was performed. The results showed that when comparing the means for two weekdays to one weekend-day, significant differences ($p < 0,05$) were observed for soft drinks, pastries, milk and vegetables. Also fruit juices, whole grain cereals, fresh fruits, milk, green and yellow vegetables were eaten significantly less at

TABLEAU I

Aliments compris dans chacune des catégories* étudiées

- | | |
|---|--|
| 1. Lait nature: entier, partiellement écrémé. | 13. Céréales et pains raffinés non sucrés, gaufres, croissants, Bagels, muffins anglais, toasts Melba. |
| 2. Fromages de toutes sortes. | 14. Pâtisseries, gâteaux, beignes, biscuits, carrés aux dattes, croustade aux pommes, muffins à la farine blanche et aux fruits. |
| 3. Crème glacée, lait glacé, laits aromatisés, yogourts aromatisés, desserts au lait. | 15. Gélatines sucrées, sorbets, Dream Whip, fudge fondant. |
| 4. Pommes, raisins, bananes, cerises, nectarines, bleuets, ananas, pêches, oranges, poires. | 16. Bonbons, chocolat, caramel, fudge, sucre à la crème, barres Granola. |
| 5. Fruits en conserve et compotes de fruits. | 17. Sirop d'érable, sauces sucrées, ketchup, miel, mélasse, confitures, gelées, relish, marinades sucrées. |
| 6. Fruits secs. | 18. Croustilles. |
| 7. Jus de fruits sucrés et non sucrés. | 19. Boissons gazeuses et aromatisantes, thés et cafés sucrés. |
| 8. Légumes verts et jaunes. | 20. Gommages non sucrées. |
| 9. Patates sucrées, bouillies, oignons frits. | 21. Gommages sucrées. |
| 10. Jus de légumes. | |
| 11. Céréales et pains à grains entiers non sucrés, muffins au son et à la farine d'avoine. | |
| 12. Céréales à grains entiers et raffinées sucrées. | |

* Regroupement fait selon la valeur nutritive et la cariogénicité présumée²².

meals during the weekend-day. Between-meal eating is generally more salted or more sweetened during the weekend-day. Foods generally considered to be more nutritious are eaten less during the weekend-day. The differences in food frequencies obtained showed the need of including one weekend-day in a three-day-diet record to avoid the over-estimation of food consumption and of the quality of the diet.

Key Words:

Dietary record, food frequency, food abstract, food habits.

Introduction

L'étude des habitudes alimentaires chez les enfants constitue un élément souvent essentiel de la recherche épidémiologique en santé dentaire. Cependant, les méthodes utilisées pour recueillir les données relatives à l'alimentation diffèrent beaucoup et l'on s'interroge encore sur la pertinence de l'emploi de certaines d'entre elles. Les méthodes habituelles de détermination des ingestions alimentaires sont: le rappel de 24 heures, l'histoire diététique, le journal alimentaire avec pesée des aliments pouvant s'échelonner sur 1 à 28 jours et le journal alimentaire basé sur une mesure d'aliments au vo-

lume ou à la portion s'effectuant lui aussi sur 1 à 28 jours. Des méthodes plus indirectes de mesure de la consommation d'aliments sont aussi parfois utilisées; ces méthodes indirectes regroupent les données relatives à la disparité des aliments, l'étude du budget consacré à l'alimentation et le questionnaire de fréquence de consommation¹⁻⁶.

Le rappel de 24 heures fait appel à la mémoire des individus et est particulièrement difficile à employer chez les enfants¹; de plus, tout comme le journal alimentaire d'une journée, il est très peu représentatif de l'alimentation d'un individu, car le contenu des repas et des collations varie trop d'une journée à l'autre pour de multiples raisons^{2,3,4,5,6,7,8}. Plusieurs auteurs^{2,3,4,5,7,9,10,11,12,13,14} sont cependant d'avis que le relevé alimentaire d'une journée suffit pour évaluer l'alimentation d'un groupe d'individus et apporte des valeurs moyennes semblables à celles fournies par un journal alimentaire plus long. D'autres auteurs^{7,10,11,15}, ont constaté que la fiabilité d'un journal alimentaire de sept jours décroît au fur et à mesure que le nombre de journées augmente, même s'il est plus représentatif des habitudes alimentaires^{4,15,16}. Le journal alimentaire de trois jours apporte une plus grande stabilité des valeurs en nutriments que le relevé d'une jour-

née^{4,14,17,18,19} et fournit des données équivalentes à celles recueillies par un journal alimentaire de sept jours, pour des individus appartenant à une même culture²⁰.

Le but de l'étude est de comparer les fréquences de consommation alimentaire obtenues au moyen d'un journal alimentaire de deux jours de semaine à celles obtenues pour une journée de fin de semaine. Cette comparaison permettra de déterminer l'importance d'inclure une journée de fin de semaine dans un journal alimentaire de trois jours.

Méthodologie

L'échantillon de cette recherche provient d'une étude sur l'évaluation du rinçage-bouche fluoré en tant que mesure préventive en santé communautaire²¹. Pour les besoins de cette recherche, l'échantillon aléatoire provenait de quatre régions: deux d'entre elles, où l'eau de boisson était fluorurée, correspondaient aux territoires desservis par les départements de santé communautaire (DSC) de Lakeshore et de Laval, alors que les deux autres régions où l'eau n'était pas fluorurée correspondaient aux territoires desservis par les DSC de Trois-Rivières et de St-Jérôme. L'échantillon était constitué de 549 élèves d'un certain nombre de classes de cinquième année du niveau primaire choisies au hasard à l'intérieur de chacune des quatre régions. La moyenne d'âge était de $11,2 \pm 0,4$ au moment de la collecte des relevés alimentaires qui s'est déroulée au printemps de 1984.

Les sujets participant à l'étude ont rempli un journal alimentaire durant trois jours consécutifs incluant une journée de fin de semaine. Une description claire des aliments et des quantités consommées était notée ainsi que le moment de consommation. Le journal était rempli à la maison, avec l'aide des parents puis remis au professeur une fois complété. L'analyse des journaux alimentaires a servi de base à l'étude des fréquences de consommation pour chaque sujet. Les aliments ont été classés en tenant compte de leur similitude en termes de valeur nutritive et de cariogénicité présumée (tableau 1)²². Les résultats de chaque sujet ont été compilés pour deux jours de semaine et pour une journée de fin de semaine; un test *t* de Student a été calculé selon la formule décrite par Gilbert et Savard²³, pour la différence de moyennes de deux échantillons dépendants.

Résultats et Discussion

La figure 1 illustre les pourcentages relatifs des fréquences de consommation moyenne par jour des catégories d'ali-

TABLEAU II

Catégories d'aliments présentant une différence significative* selon le test t de Student dans la fréquence moyenne** de consommation pour 2 jours de semaine par rapport à 1 journée de fin de semaine, aux repas (□), aux collations (○) et pour l'ensemble de la journée (△).

Catégories d'aliments	2 jours de semaine □	1 journée de fin de semaine □	2 jours de semaine ○	1 journée de fin de semaine ○	2 jours de semaine △	1 journée de fin de semaine △
Lait nature (1)	1,18 ± 0,90	0,93 ± 0,91	—	—	1,38 ± 1,01	1,10 ± 1,02
Fruits crus (4)	0,28 ± 0,50	0,21 ± 0,49	—	—	—	—
Jus de fruits (7)	0,50 ± 0,59	0,38 ± 0,60	0,11 ± 0,30	0,19 ± 0,54	—	—
Légumes verts et jaunes (8)	0,35 ± 0,61	0,24 ± 0,55	0,04 ± 0,18	0,02 ± 0,16	0,39 ± 0,63	0,26 ± 0,57
Produits à grains entiers non sucrés (11)	0,12 ± 0,37	0,09 ± 0,31	—	—	—	—
Produits céréaliers raffinés, non sucrés (12)	—	—	—	—	1,35 ± 0,85	1,24 ± 0,92
Produits de boulangerie sucrés (14)	0,60 ± 0,63	0,43 ± 0,65	0,30 ± 0,47	0,24 ± 0,53	0,89 ± 0,80	0,67 ± 0,83
Gélatines sucrées, sorbets (15)	—	—	0,10 ± 0,27	0,19 ± 0,46	0,18 ± 0,56	0,27 ± 0,70
Bonbons, chocolat, caramel . . . (16)	0,11 ± 0,27	0,06 ± 0,30	—	—	—	—
Croustilles (18)	—	—	0,08 ± 0,23	0,15 ± 0,44	0,12 ± 0,29	0,20 ± 0,50
Boissons gazeuses et sucrées (19)	0,36 ± 0,52	0,43 ± 0,70	0,17 ± 0,37	0,24 ± 0,62	0,54 ± 0,72	0,67 ± 1,02
Gommes non sucrées (20)	0,01 ± 0,07	0,00 ± 0,00	—	—	—	—
Gommes sucrées (21)	—	—	—	—	0,29 ± 0,54	0,22 ± 0,56

* p < 0,05
** Moyenne ± écart-type

ments entre deux jours de semaine et un jour de fin de semaine. Le **tableau II** donne la liste des catégories d'aliments présentant des différences significatives ($p < 0,05$) selon le test t de Student dans la fréquence moyenne de consommation pour deux jours de semaine par rapport à une journée de fin de semaine aux repas, aux collations et pour l'ensemble de la journée.

Plusieurs catégories d'aliments sont consommés moins fréquemment aux repas de fin de semaine: c'est le cas du lait nature, des fruits frais, des jus de fruits, des légumes verts et jaunes, des produits céréaliers à grains entiers non sucrés, tout comme de l'ensemble des "sucreries". Seules les boissons gazeuses et aromatisantes et les thés et les cafés sucrés sont consommés plus fréquemment aux repas de fin de semaine. Les collations de fin de semaine sont plus sucrées et plus salées que durant la semaine, et il en est de même pour l'alimentation de toute la journée de fin de semaine. Certaines catégories d'aliments considérés comme plus nutritives telles que le lait nature et les légumes verts et jaunes subissent une diminution de fréquence de consommation pour l'ensemble de la journée, durant la fin de semaine (**figure 1**). Il est intéressant de noter, dans les résultats obtenus, pour beau-

coup de catégories d'aliments, une dispersion très grande par rapport à la moyenne (**tableau II**).

Le nombre et la nature des catégories d'aliments présentant une différence significative entre les jours de semaine et de fin de semaine, dans leur fréquence moyenne de consommation confirment que les journaux alimentaires qui omettraient la journée de fin de semaine auraient tendance à surestimer, pour plusieurs aliments, les quantités ingérées par les enfants de cet âge. De plus, l'absence de cette journée amènerait à sous-estimer la fréquence de consommation de collations à valeur nutritive plus faible. Plusieurs auteurs recommandent d'inclure une journée de fin de semaine au journal alimentaire^{1,2,5,8,12,13,15,17,20} puisqu'ils ont remarqué que les habitudes alimentaires diffèrent entre la semaine et la fin de semaine. Eppright et al.²⁴ soulignent que les habitudes de fin de semaine, surtout celles touchant le lait et la viande, diffèrent de celles de la semaine et les résultats de la présente étude le confirment en ce qui concerne la catégorie du lait¹. Certains aliments sont consommés régulièrement tout au long de la semaine; c'est le cas des fruits en conserve et des compotes de fruits, des desserts au lait et du fromage. Ces aliments sont probablement plus constamment disponibles au

menu familial habituel et sont consommés, par conséquent, plus par habitude que par choix conscient des enfants de cet âge. La diminution de consommation de pâtisseries et de desserts sucrés durant la fin de semaine pourrait s'expliquer de plusieurs façons: la nature des collations de semaine diffère de celles de la fin de semaine ou les repas plus élaborés de la fin de semaine satisfont l'appétit de l'enfant avant que celui-ci ait le goût pour un dessert.

Pour des enfants de cet âge, la difficulté d'établir une méthode de cueillette de données satisfaisante découle de plusieurs réalités: leurs habitudes alimentaires sont en devenir¹⁵, elles subissent encore grandement l'influence de celles des parents, mais par ailleurs, leurs choix alimentaire sont souvent dictés par leur degré d'appétit et leur niveau d'activité physique de même que par l'impact de leurs pairs et de la publicité sur les aliments. Les enfants de 11 ans commencent à devenir plus autonomes face à leurs préférences et à leurs dégoûts alimentaires et, comme le soulignent Clancy et al.²⁵, une plus grande disponibilité d'argent de poche les amène souvent à changer la nature de leurs collations. Le choix de la méthode à utiliser est donc fonction de plusieurs facteurs; le **tableau III** énumère ces principaux facteurs.

FIGURE I

Comparaison (pourcentage relatif) des fréquences de consommation moyenne d'aliments par jour
(test t de Student: $p < 0,05$) entre deux jours de semaine et un jour de fin de semaine

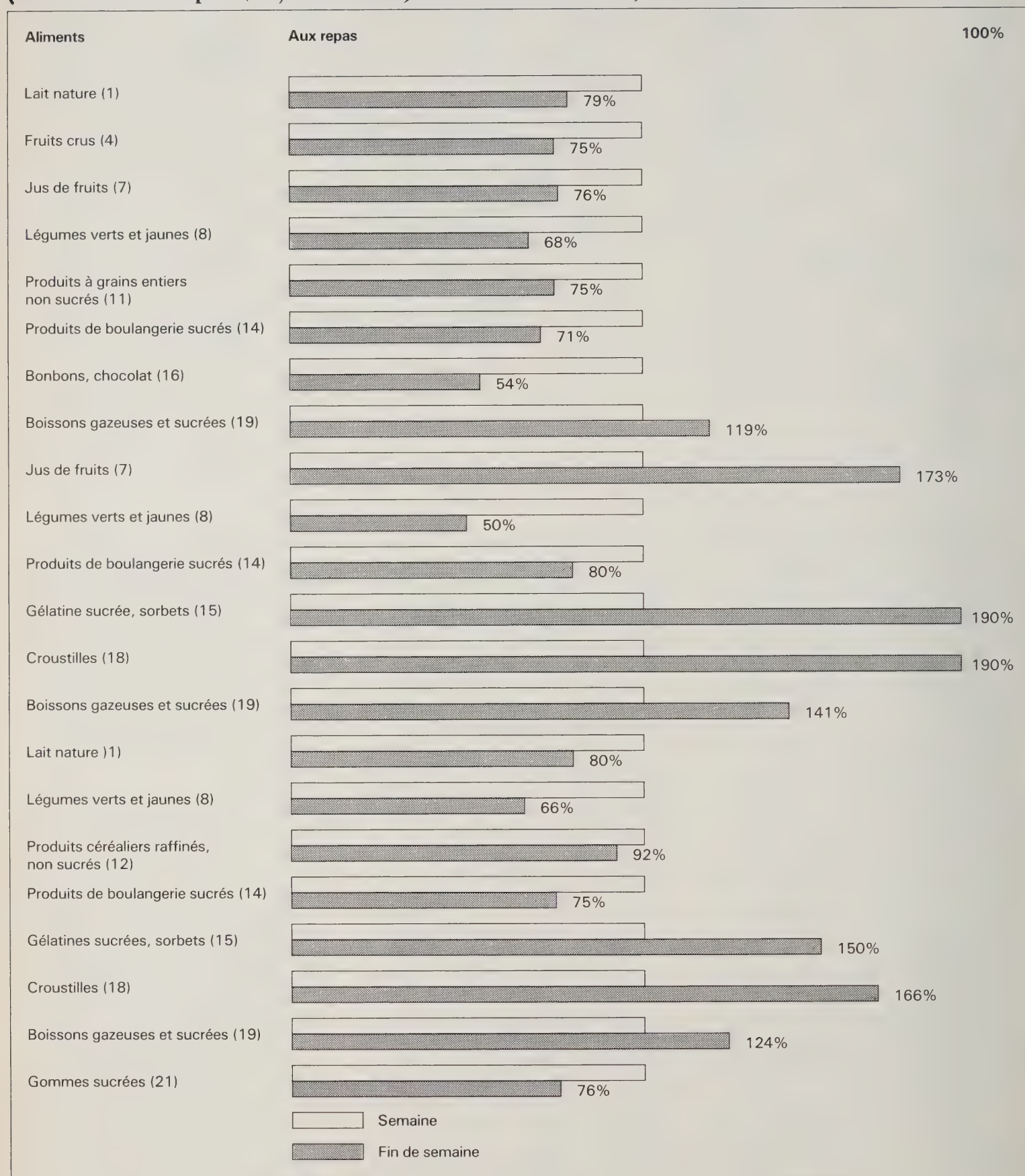


TABLEAU III

Facteurs à considérer dans le choix de la méthode d'évaluation alimentaire, lors d'études épidémiologiques*

Objectif de la recherche (évaluation quantitative ou qualitative).
Disponibilité du personnel comme ressource.
Disponibilité au point de vue temps du personnel et des participants à l'étude.
Population à l'étude: • nature de la population (nourrissons, jeunes enfants, adolescents, adultes, personnes âgées); • individus ou groupes.
Collaboration des participants basée sur: la mémoire, l'acceptation de compiler durant plusieurs jours les aliments consommés, la nécessité de subir des tests biochimiques ou autres tests.
Stabilité du patron alimentaire des participants à l'étude.
Variations possibles dans le patron alimentaire de chaque individu: • d'un jour à l'autre; • d'une semaine à l'autre; • durant la fin de semaine; • durant l'enquête, pour plaire aux responsables de l'enquête ou pour faire croire que les habitudes alimentaires se sont vraiment améliorées; • selon les saisons.
* Références ^{1,2,3,4,5,6,9,10,11,26,29,30,}

Tremblay et al.²⁶ et Pav et al.¹⁴ ont cependant constaté que l'alimentation des enfants, par rapport à celle de tout autre groupe d'âge, semble moins varier de jour en jour. Cependant, bien que les enfants de 11 ans aient les habiletés nécessaires pour donner une information adéquate sur leur consommation d'aliments²⁷, on ne peut ignorer la possibilité qu'ils aient acquis suffisamment d'information sur les bons aliments pour que cela influence le contenu de leur journal alimentaire sans que leurs habitudes alimentaires soient réellement modifiées²⁸. Ceci pourrait expliquer en partie, par exemple, la diminution de fréquence de consommation des produits de boulangerie sucrés en fin de semaine, tant aux repas qu'aux collations. L'addition de la journée de fin de semaine dans un journal alimentaire de trois jours permet d'obtenir une fréquence de consommation alimentaire plus juste; en effet, cette journée permet de tenir compte de la sélection plus fréquente des aliments considérés comme moins nutritifs au cours des journées de fin de semaine. Le journal alimentaire de trois jours incluant une journée de fin de semaine constitue donc une méthode réaliste de cueillette d'information sur les habitudes alimentaires de groupes de jeunes de 11 ans. Δ

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Cette étude a été rendue possible grâce aux contributions du Programme national de recherche et de développement en santé (octroi no: 6605-1869-07), Santé et Bien-Être social, Canada et du Fonds Émile Beaulieu, Université Laval.
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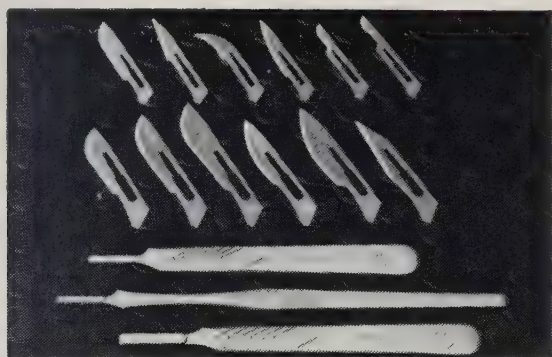
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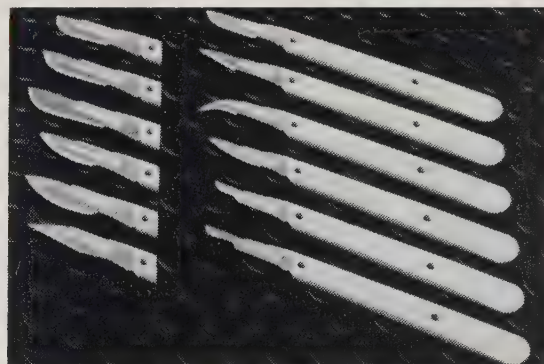


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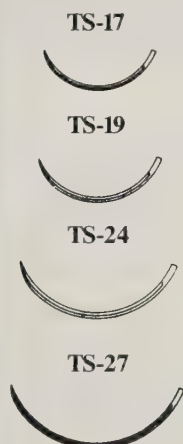
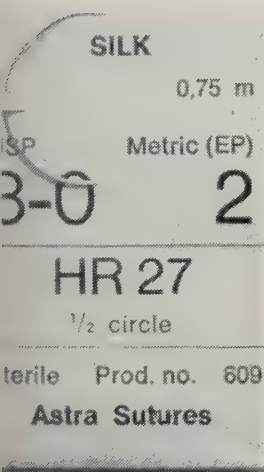
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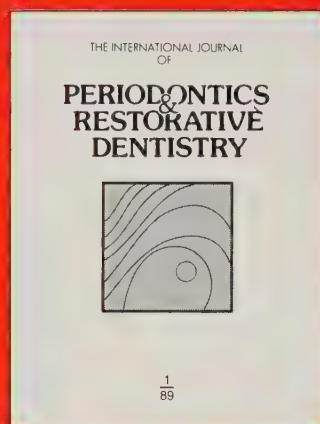
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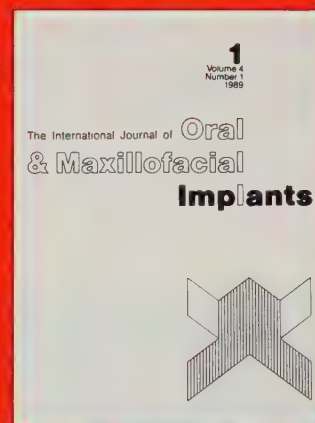
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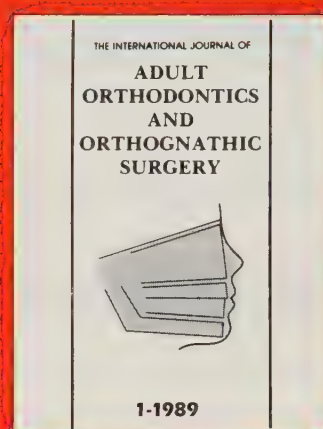
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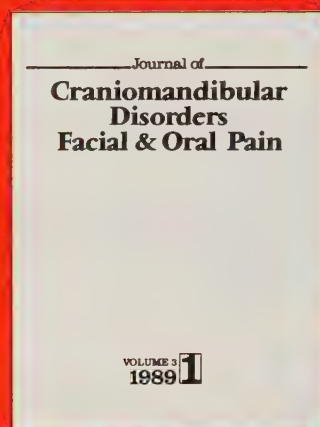
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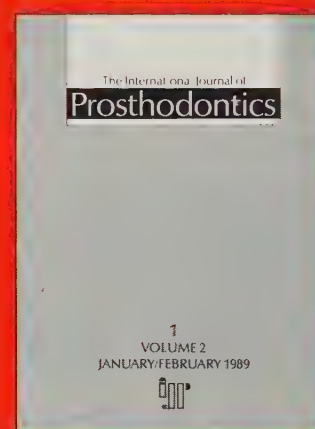
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11/88

Announcements

February/Février 1989

February 2-4: Expanding Dentistry's Horizons The Miami Winter Meeting sponsored by the East Coast Dental Society at the Hyatt Regency Miami, Florida. For more information, contact: East Coast Dental Society, 420 S. Dixie Highway, Suite 2E, Coral Gables, FL 33146 U.S.A. (305) 667-3647.

February 4: Centennial Ball of the Xi Psi Phi Dental Fraternity at the Royal York Hotel in Toronto. For more information, write: Dr. Don Ducasse, 4211 Yonge St., Suite 204, Willowdale, Ont M2P 2A9.

February 4-11: Alpha Omega International Western Scientific Winter Seminar in Snowbird, Utah. For information, contact: ALPHA OMEGA, 2016 Bathurst St, Toronto, Ont M5P 3L1. Phone (416) 782-7277.

February 17-21: Annual Convention of the Jamaica Dental Association at Mallard's Beach Hotel, Ocho Rios, Jamaica. For information, contact: Jamaica Dental Association, PO Box 19, Kingston 5; Jamaica WI.

February 18: Prosthetic Management of Dental Implants at the Chicago Hilton & Towers. For more information, contact: Central District, American Academy of Implant Dentistry, c/o Dr. Dean Doyle, Treasurer, 801 West Court, Beatrice, NE 68310 USA.

February 19-22: 124th Midwinter Meeting of the Chicago Dental Society. Contact: Chicago Dental Society, 401 North Michigan Ave, Chicago IL 60611 USA. (312) 836-7300.

February 25-March 4: Virgin Island 11th Annual Scientific Meeting.

Limited Attendance. Please contact: Dr. Bob Brandon, 85 Lonsdale Rd, London, Ont N6G 1T4 (519) 657-3368.

March/Mars 1989

March 6-10: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmo, Sweden. For information, contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

March 8-11: International Congress of Oral Implantologists in Paris, France. Contact: Margaret M. Jackson, 248 Lorraine Ave, 3rd Floor, Upper Montclair, NJ 07043 USA. (201) 783-6300.

March 11: Advanced Prosthodontics for Restorative Dentists a continuing education course sponsored by the Alberta AGD in Calgary, Alta at the Convention Centre. For further information, contact: Dr. Eugene Della Lana, (403) 244-4867.

March 16-19: First Asian Congress on Oral and Maxillofacial Surgery organized by the Asian Association of Oral and Maxillofacial Surgeons in Manila, Philippines. Invited speakers include E. Steinhauser (FDR), J. Langdon (UK), Bruce Epker (USA). For further details, write: Congress Secretariat, First Asian Congress on Oral and Maxillofacial Surgery, c/o Philippine Heart Center, Suite 401, East Avenue, Quezon City 1100, Philippines.

March 18-25: 19th International Alpine Dental Conference in Courchevel 1850, France. Details from: L.W. Bryer, International Dental Foundation, 24 Cadogan Square, London SW1X 0JP. Tel: 01-235 0787.

March 23-24: 8th Jordanian Dental Congress in Jordan. Contact: Dr. Irfan Sultan, PO Box 1326, Amman, Jordan.

March 29-April 1: Review of the Biologic and Clinical Aspect of Endodontology in Ann Arbor, MI. Contact: Office of Continuing Education, School of Dentistry, University of Michigan, Ann Arbor, MI 48109-1078 USA (313) 763-5070.

April/Avril 1989

April 10-15: 22nd National Dental Congress of the German Dental Association in conjunction with 111th Annual Meeting of the German Society of Dental, Oral and Orthodontic Medicine and the German Dental Industry Association's International Dental Show in Stuttgart, Germany. Contact: Stuttgarter Mess & Kongress GmbH, Am Kochenhof 16, D-7000 Stuttgart 1, West Germany.

April 12-15: Bundesverband der Deutschen Zahnartze in Killesberg/Stuttgart, Germany. Contact: Cornelia Hackenbruch, Bundesverband d. Deutschen Zahnartze, Universitätsstr. 73, 5000 Koln 41, Germany.

April 17-19: Oral Complications of Cancer Therapies by the National Institute of Health in Bethesda, Maryland. Contact: Kathleen Edmunds, Prospect Associates, Suite 500, 1801 Rockville Pike, Rockville, Maryland 20852 USA. (301) 468-MEET.

April 19-23: Irish Dental Association, Annual Scientific Conference in Galway, Ireland. Contact: M. Ferguson, Irish Dental Association, 29 Kenilworth Square, Dublin, 6, Ireland Phone 978435/6.

April 26-30: 14th Asian Pacific Dental Congress at the Korea World Trade Center in Seoul, Korea. For further information, please contact: Secretariat of the 14th APDC, c/o Korean Dental Association, PO Box 41 Youngdeungpo, Seoul 150, Korea Tel: (02) 653-3351/3.

April 27-29: Journées dentaires internationales de Nice-Côte d'Azur in Nice France. For information, write: Dr. Jean-Louis Vidal-Revel, President, Journées dentaires internationales de Nice-Côte d'Azur, 37, av. Villermont, 06000 Nice, France.

April 27-30: Ontario Dental Association 122nd Annual Spring Meeting at the Metro Toronto Convention Centre. All members and groups of the dental profession are invited to prepare a clinic for presentation at the Spring Convention. Deadline for applications is November 30, 1988. For more information, contact: Diana Thorneycroft, ODA Headquarter, 234 St. George St, Toronto, Ont. M5R 2P1.

April 28: 10th Year Class Reunion University of Toronto in the Niagara Room of L'Hotel. For further information, contact: Dr. Bill Hawrysh (416) 626-7972 or Dr. Jack Gerrow (902) 424-8806.

April 28-30: Canadian Academy of Periodontology and Ontario Society of Periodontists Seminar to be held at the Sutton Place Hotel, Toronto. For more information: Dr. Marvin Budd, 2130 Lawrence Ave E., Suite 206, Scarborough, Ont M1R 3A6 (416) 751-8811.

May/Mai 1989

May 1-3: 9th International Dental Meeting in Nice, France. For more information, contact: Mrs. Schmitt, 37, av Villermont, 06000 Nice, France. Tel: (33) 93 98 26 09.

May 13: Update on the Management of Periodontitis sponsored by the Alberta Academy of Periodontics in Calgary, Alberta. Contact: Alberta Academy of Periodontology, 1333-8th St S.W., Suite 505, Calgary, Alberta T2R 1M6.

May 16-20: 65th Congress of the European Orthodontic Society in Würzburg, West Germany. For details, contact: Prof.

Dr. Emil Witt, Universitätszahnklinik, Pleicherwall 2, D-8700 Würzburg, West Germany.

May 21-26: 10th International Conference on Oral and Maxillofacial Surgery in Jerusalem. Contact: Dr. Eli Ronen, Chairman, Organizing Committee, 10th International Conference on Oral and Maxillofacial Surgery, PO Box 5006, Tel Aviv 61500, Israel.

May 24-27: Swiss Dental Association Convention in Switzerland. Contact: Dr. Pierre Spahn, 51, av du Casino, 1820 Montreux, Switzerland.

May 28-June 1: Les Journées dentaires du Québec 1989 at the Montréal Convention Centre. For information, please contact: Chantal Bally, ODQ, 625 René-Levesque West, 5th Floor, Montréal (Qué) H3B 1R2. (514) 875-8511.

May 29-June 2: Periodontal and Prosthetic Treatment in Advanced Cases in Malmo, Sweden. For details, contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June/June 1989

June 1-5: 12th Congress International Association of Dentistry for Children in Athens, Greece. For details, contact: Secretariat, 12th Congress IADC, 41, Skoufa Str, Athens 106 73, Greece.

June 4-9: V International Conference on AIDS in Montréal, Québec. For more information, write to: V International Conference on AIDS, Secretariat, Kenness Canada Inc, 1010, rue Ste-Catherine ouest, bureau 628, Montréal (Québec) H3B 1G7.

June 5-9: XXV Congreso nacional y V International de Odontología y Estomatología in Malaga, Spain. For information, contact: SITECC-SIASA, c/o Manuel del Palacio, 16, Edif. Costa Bella, Apto. 3, 29017 MALAGA, Spain. Tel: 29 29 20 - 29 41 43.

June 5-9: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmo, Sweden. Contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June 8-11: Alberta Dental Association Convention in Red Deer, Alberta at the Capri Centre. Theme "Unity in Dentistry". Registration: Dr. Barry Fleming, Highland Green Shopping Centre, 6315 Horn St, Red Deer T4N 6H5 Tel: (403) 346-8443.

June 19-23: 14th International Congress of Gerontology in Acapulco, Mexico. For details, contact: Congress Secretariat, Jojutla No. 91, Tlalpan CP 14090, Mexico D.F., Mexico.

June 26-30: XII Congreso de la Federación odontológica latinoamericana y XI Congreso nacional de Estomatología in Havana, Cuba. Contact: International Conference Center, Apartado 16046, Zona 16, Havana, Cuba. Tel: 20-4653.

June 28-July 1: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Mrs. D. Scanlon, 53 Ariel Crt, Nepean, Ont K2H 3J1. (613) 728-8730.

June 28-July 1: International Association of Dental Research & International Conference on Oral Biology in Dublin, Ireland. For information, contact: Ms. Eloise Bredder, Administrative Assistant, American Association of Dental Research, 1111 - 14th St NW, Suite 100, Washington, DC 20005 USA.

June 30-July 2: Dentistry 89 in Oxford, England. For details, contact: Linda Bridges, Conference Office, British Dental Association, 64 Wimpole St, London W1M 8AL. Tel: 01-935 0875.

August/Août 1989

August 27-30: Canadian Dental Association Convention in Vancouver, British Columbia. For more information, contact: Miss Linda Teteruck, Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6 Tel: (613) 523-1770.

September/Septembre 1989

September 2-8: 77th Annual World Dental Congress, FDI, in Amsterdam, The Netherlands. Congress Secretariat, c/o Organisatie Bureau Amsterdam bv, Europaplein 12, 1078 GZ Amsterdam, The Netherlands. (31) 20-5491212.

Cameron, Archie F.: A graduate of McGill University's dental faculty in 1943, Dr. Cameron served in the Royal Canadian Dental Corps at several naval establishments, following graduation. At the end of World War II, he established a practice in Montreal. He was a dental faculty member at McGill University for many years.

Compton, Cecil M.: Dr. Compton was graduated from the University of Alberta in 1919. He conducted a practice in Grande Prairie, Alberta. He was a Life Member of the Canadian Dental Association.

Erickson, Vern, M.: A University of Alberta graduate, Class of 1955, Dr. Erickson maintained a practice at Dawson Creek and later in Abbotsford, British Columbia.

Godsoe, Walter H.: Dr. Godsoe was a graduate of the University of Toronto's dental school in 1929. He practiced in Toronto for many years. He was a Life Member of the Canadian Dental Association.

Miller, L.W.: Dr. Miller received his dental degree from the University of Alberta in 1948. He conducted a private practice at Grenfell, Saskatchewan.

Montgomery, J.G.: Dr. Montgomery was a graduate of the Royal College of Dentists in Toronto, in 1919. For many years, he maintained a practice in Ottawa. He was a Life Member of the Canadian Dental Association.

Peterkin, Stuart T.: A graduate of the University of Toronto's dental school in 1950, Dr. Peterkin conducted a practice in Toronto.

Scott, Robert W.: A graduate of the University of British Columbia dental school in 1984, Dr. Scott has established a practice in Lantzville, British Columbia.

Walker, John G.: Dr. Walker received his dental degree from the University of Alberta in 1941. Following graduation, he served in the Royal Canadian Dental Corps (1941-1945). He conducted a long-time practice in Calgary, Alberta. Dr. Walker was a Life Member of the Canadian Dental Association.

BOARD OF GOVERNORS NOTICE OF MEETING

The Interim Meeting of the Board of Governors of the Canadian Dental Association will be held on March 31, April 1, 1989 (Friday and Saturday respectively) at the Four Seasons Hotel, Ottawa, commencing at 9:00 a.m. on March 31.

It is brought to your attention that meetings of the Board of Governors are open to all members of the Association.

The Board is composed of twenty-seven governors with voting privileges and a Chairman. Governors represent members across Canada on a 1 to 500 ratio. The Canadian Forces Dental Services, Student members and affiliate members from Québec are represented by one member each.

In addition, there are two non-voting members, namely, the senior dental representative of the Department of National Health and Welfare and the Department of Veterans Affairs.

A complete listing of the Board of Governors follows:

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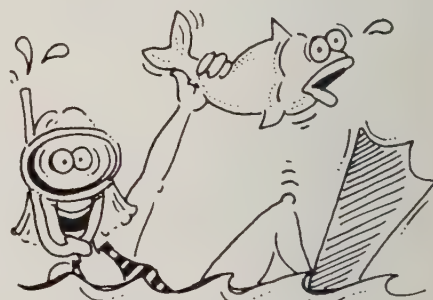
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ONTARIO—Ottawa: Modern, well-established periodontal practice requires a full-time associate with opportunity for partnership. Candidate should be a certified periodontist with NDEB certificate and membership in the Royal College of Dental Surgeons of Ontario. Call Dr. J. Kershman (613) 738-1108 or 521-8161.

ONTARIO—Ottawa Valley: Family practice for sale — established 22 years. Owner plans retirement and is willing to associate for specified period. Low overhead — combined residence available too. Hospital privileges — excellent recreation area, present staff willing to continue. Two operatories, 900 sq ft, air conditioning. Please reply to CDA Box 2438.

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Scientific Articles:

are contributions dealing with research, diagnosis and treatment of dental disease, studies in education, clinical and laboratory research and other detailed investigations pertinent to dentistry and related fields. The text should not exceed 3,000 to 4,000 words (approximately four Journal pages).

Clinical Reports:

are brief (up to 2,000 words) reports, case histories and clinical observations. References should be limited and minimum number of illustrations used.

Opinions:

fully documented (800 words or less) are welcome to be reviewed for publication at the discretion of the editor.

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A covering letter designating one author as correspondent with a full address and telephone number must accompany the article. All scientific articles are subject to review by selected consultant referees. Acceptance or rejection of an article for publication is based on the referees' reports plus editorial consideration.

The editor reserves the right to edit manuscripts for stylistic consistency, clarity and conciseness. The author named as correspondent will receive a copy of the edited manuscript for checking prior to publication. Authors will also be able to proofread their article at the galley stage; however, **no changes** other than typographical corrections may be made. If the author does not respond

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1. Hechter, F.J., Symmetry and dental arch form of orthodontically treated patients. *JCDA* 44:173-184, 1978.

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2. Kilpatrick, H.C. Work simplification in dentistry, ed. 2, Philadelphia, Saunders, 1964.

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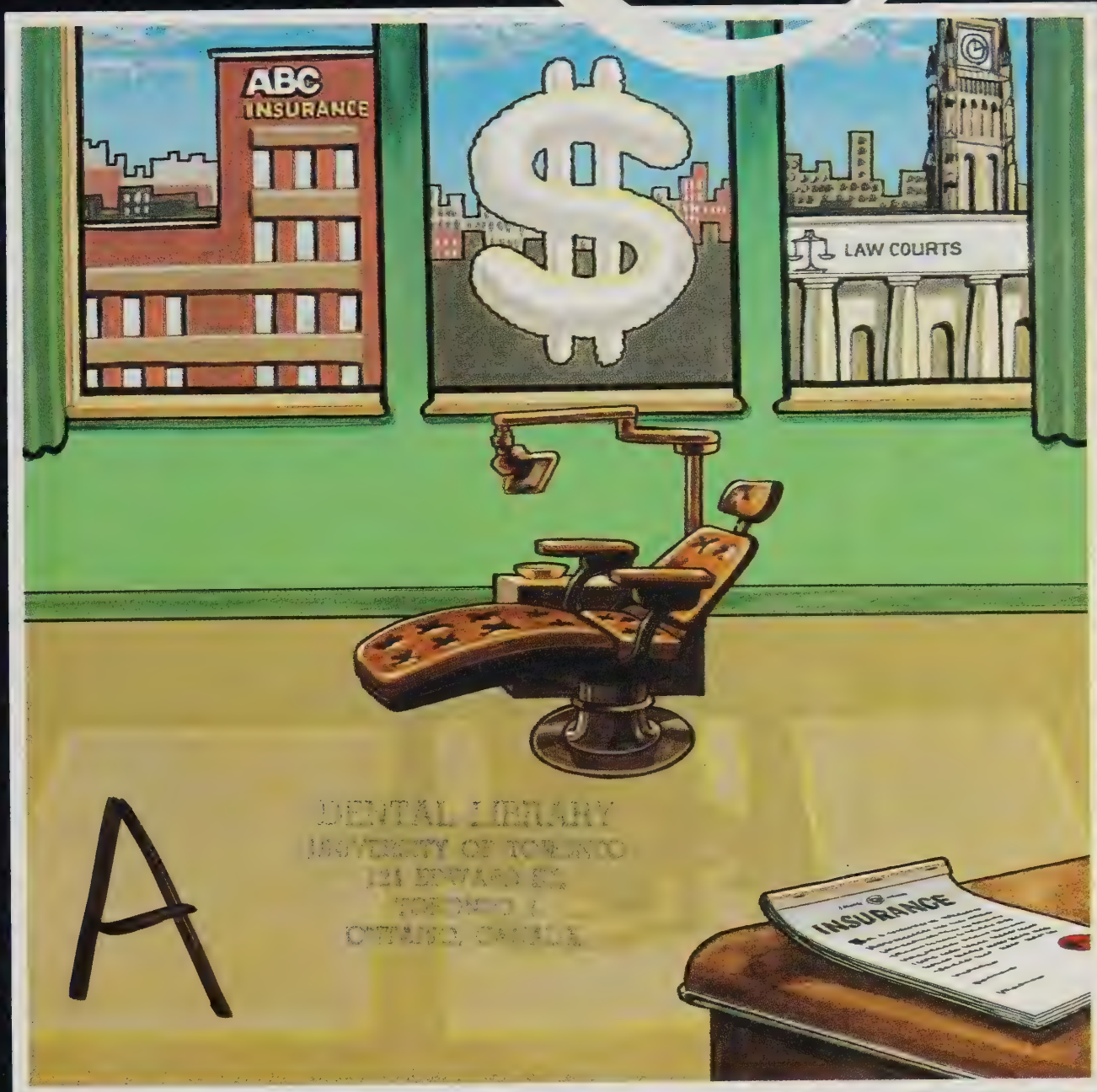
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Notice of change of address should be received before the 10th of the month, to become effective the following month.

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada — \$42; United States — \$44; all other — \$46. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

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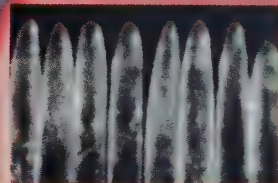
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JOURNAL

Canadian Dental Association
l'Association Dentaire Canadienne

February 1989

Vol. 55 No. 2

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Confused about infection control?

We can help

The amount of information generated today about infection control is overwhelming. To clarify the confusion, ignore the claims and focus on the facts.

FACT: The CDA and CDC have both stated that all heat stable dental instruments should be routinely sterilized between use by autoclave, dry heat or chemical vapor.

FACT: There are many surfaces and instruments in a dental operatory which cannot undergo sterilization. A high-to-intermediate level disinfectant is therefore required. For complete disinfection, you want a tuberculocidal, broad spectrum kill, an EPA and ADA acceptable product, non-corrosive to instruments and as non-toxic as possible.

FACT: Pathex, a potent disinfectant from the Block Drug Company, is a broad spectrum, dual synthetic phenol which is bactericidal, virucidal, fungicidal, pseudomonacidal, and tuberculocidal in just 10 minutes.

FACT: Pathex is intended for use as a surface disinfectant (a unique non-aerosol sprayer bottle is available for this purpose); a holding solution (a special detergent formula starts cleaning action chairside); and for immersion disinfection of semi-critical instruments.

FACT: The combination phenol formulas based on o-phenylphenol (9%) and o-benzyl-p-chlorophenol (1%), when compared with glutaraldehydes, are less corrosive to metal instruments, will not yellow skin or release irritant fumes or odor, and are less toxic.^{1, 2}

FACT: Pathex is biodegradable.

When all the "noise" is eliminated, so is the confusion. The choice is clear — Pathex for your disinfection needs.



1. EPA Registration No. 46851-1

2. American Dental Association Council on Dental Therapeutics. Acceptance of (synthetic phenol) disinfectant for instruments and equipment. JADA 110:394, 1985



Dental Products Division
Block Drug Co. (Canada) Ltd.,
Toronto, Ontario M4B 3E3
1-800-268-5747

Quality Products for Dental Health

Pathex

An effective disinfectant solution for dental instruments and devices.

Insurance: Friend or foe?

A riddle! What is it that pervades our entire lives from the day we are born; from the time we rise in the morning, 'till we rest our heads on a pillow at night, and indeed our every sleeping hour? Like the heartbeat of life, what is it that goes on and on, only ceasing to influence our very being until death ends all? Correction; even after death its very influence affects our heirs, perhaps for the rest of their lives.

The answer: Insurance! Consider the average dentist's day. The life that is ours; the bed in which we sleep, the clothes we put on in the morning, the house where we live and all its contents. The family we bid goodbye as we climb into the car and drive to our place of practice; the dental practice which includes all its possessions, its staff and indeed the patients who have put their trust in our care.

It would seem that nothing escapes the tentacles of insurance. One would almost believe it governs the very air we breathe. Perhaps it does. Think back to December 3, 1984 when poisonous gas from the Union Carbide plant in Bhopal, India, leaked into the atmosphere of the community of 300,000 people. Since then over 3,000 have died, 20,000 still suffer its effects and the litigation estimates range from \$3 billion (US) to \$15 billion.

The principle of insurance certainly isn't new. It was practiced by the ancients. The Babylonians 40 centuries ago had types of insurance to protect against travel, crop and mugging disasters. More than 2,000 years ago Chinese merchants split their cargoes into a number of vessels to "spread losses" in case of shipwreck. Both the Phoenicians and the Greeks and the Roman collegia societies had a form of burial insurance.

For countless years insurance has existed for a primary reason: to dispel the fear of disaster, the calamitous. For this we must give credit. Known to almost all of us is the dentist who, when stricken by a coronary, avoided complete catastrophe by having insurance benefits to pay the rent and put food on the table. Known also — tragically so — is the unfortunate dentist whose family faces destitution because he never carried sufficient insurance.

As Canadians we are no strangers to insurance. We are, in fact, the second most insured nation in the world, surpassed only by (you might have guessed it!) — Japan. Canadians own over 700 billion dollars in life insurance alone. We support a \$70 billion life insurance industry: (the total dental treatment bill in Canada is only \$1.5 billion per year!). It is estimated that 23 million Canadians, 92 per cent, have some form of disability/accident, extended health care and dental plans. It is also estimated that about 65 per cent of all our dental patients have third party coverage.

Thus, dentists should really not be surprised at what is happening within our community when the topic of insurance seems to surface with each delivery of mail and is on the agenda of every dental meeting. Surprised? No, but certainly concerned. The power of insurance, considering the money it controls, is awesome indeed.

The top fifteen life insurance companies in Canada have annual premiums of almost \$16 billion and assets of \$100 billion. In fact, the top five — Manufacturers, Sun Life, Great West Life, Mutual and Canada Life — control almost two-thirds of that \$100 billion. Awesome also is the fact two financial conglomerates control enormous empires of insurance, trust and real estate. The Bronfman-Brascan-Trilon Empire controls London Life, Royal Trust and Royal LePage while across the street the Desmarais-Power Corp Empire controls Great-West Life, Montreal Trust and the Investors Group.

What chance, what remote chance, does dentistry think it has when taking on any aspect of the insurance industry? If we estimated (and we are dreaming) the total net worth of every dentist in the country at \$.5 million each, the total would be \$8 million. Not much when you place it beside Trilon's assets of \$70 billion. (Bronfman's Trilon is Canada's largest financial services holding company). The chance we take, the challenge we make, is that dentistry is RIGHT.

No organization, no corporation, no empire can, should, or dare interfere with the freedom of choice between dentist and patient, nor should they institute any system that interferes with the basic right of our profession to make decisions based on quality dentistry alone, rather than what an insurance policy dictates. The profession has mobilized through Dialogue in Dentistry, the CDA Third Party Dental Plans Committee and its provincial counterparts to ensure the dental profession will not succumb, and be taken over by big business.

*"Power, like a desolating pestilence,
Pollutes whate'er it touches. . ."*

(Shelley, 1792-1822)

P. Ralph Crawford, DMD

Editor, Journal of the Canadian Dental Association

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted.



Excellent insurance program

Canadian dentists who are members of the Canadian Dental Association have enjoyed some of the finest insurance programs available to any professional group. This has occurred only through the hard work and dedication of those dentists who manage the Canadian Dental Insurance Plans for the dentists of Canada.

The management and staff of CDSPI and the Board of Directors, selected from every region of Canada, have worked diligently to ensure that every aspect of insurance to fulfil the needs of the dental profession are available at the lowest possible premium rates. The insurance field is a very competitive one, and it is necessary from time to time to test the market, to ensure that our insurance programs are indeed the best ones the market will bear.

This year all Canadian Dentists' Insurance Plans, with the exception of malpractice insurance, were put out to tender because the renewal proposal put forward by the previous carrier was unacceptable to the Canadian Dental Association. It was also decided to take this opportunity to have new insurers provide estimates for potential program improvements and changes. Specifications were released to 14 underwriters, who were asked to submit quotations. However, submissions were received from only a very small sampling of the market. Most insurers declined to bid for a variety of reasons. The final decision to select the insurance company which complied in all aspects of the tendering process, fell to the Executive Council of the Canadian Dental Association. It was certainly not a decision taken lightly, and one of great difficulty. The difficulty arose because the final submissions were received from companies involved in capitation to some degree or another. If a strictly business decision was to be made, it was clear from the outset which company should be chosen. The final decision was made only after assurance from the president of the company which won the contract, that his company would not actively market capitation products.

We must now work from within to convince this company that capitation type of dental health care delivery is neither in the public's nor the profession's best interest. We can then proceed with the best possible insurance plans for dentists at the lowest possible premium rates over the next three years.

For the dentists in Canada who feel that the decision taken is neither right nor good enough in either principle or business terms, I would ask that you consider all realistic choices available and, above all future potential opportunities. Our present carrier is concerned about its image in the minds of Canadian dentists. Let's work towards a mutually respectful relationship.

*Jack W. Niedermayer, BA, DDS
President of the Canadian Dental Association*

Interdisciplinary conference considers competency strategies

A conference on maintaining professional competence was held at the Metro Convention Centre in Toronto on October 20-22, 1988. The conference was organized by the University of Toronto School of Continuing Studies, assisted by various Ontario and Canadian professional associations, governing bodies and licensing authorities.

Registrants came from all across Canada and included practitioners, educators and association officials from medicine, pharmacy, law, dentistry, engineering, architecture, nursing, optometry, accountancy, land surveying, interior design and medical technology. Representatives from Canadian Consumers Association and Patients Rights Groups were also in attendance.

Dentistry was represented by Dr. D.M. Bonang, Provincial Dental Board of Nova Scotia; Dr. M. Cooper, Mr. J. Gillies and Dr. G. Sweetnam, Ontario Dental Association; L. Dempster, Dr. J. Krupanszky and M. Pohlar, University of Toronto, Faculty of Dentistry; Dr. G. Nikiforuk, Dr. K. Pownall, Dr. W. Treleaven and Dr. R.L. Ellis, The Royal College of Dental Surgeons of Ontario; Dr. A. Schwartz, University of Manitoba, Faculty of Dentistry; Dr. B. Rocky, College of Dental Surgeons of British Columbia; J. Wong,

University of British Columbia, Continuing Dental Education; Dr. B.P. Martinello, Alberta Dental Association; K. MacDonald, Dalhousie University, Faculty of Dentistry; Dr. G. Kravis, National Dental Examining Board of Canada; and Dr. J. Eisner, Canadian Faculties of Dentistry.

This was a major conference organized to address the major issues which professions must face regarding the continued competence of their members. Every occupation that lays claim to the term "profession" must constantly seek to improve itself in certain distinctive ways. This conference enabled various professions to exchange and develop strategies for maintaining competency through a lifetime of learning.

There were various plenary sessions for major addresses and panels, but the major work of the conference was done in small interdisciplinary groups focussing on specific topic areas, some concerned with conceptual issues, others concerned with the development of competency frameworks and others with the funding, administering and evaluating of competency strategies.

The assigned working group topic areas were:

1. Defining and Measuring Competence
2. Building the Base — Pre-Practice

Education and Training

3. Establishing Professional Practice
4. Sharing and Monitoring Professional Expertise
5. Assisting Professionals in Pre-Retirement Years
6. The Administration of Competence.

These topics were examined in light of what is being done now, what change should be made and what obstacles may impede these changes, what would be the ideal situation but, given the realities of costs and other obstacles, what resources and support for change may be drawn on by the professions.

The immediate outcome of this conference will be a series of recommendations designed to inform provincial governments, professional regulatory bodies, faculties and voluntary associations as they continue with the work of developing competence strategies specific to each profession.

A publication detailing the recommendations and documenting the discussions of the working groups will be distributed to all professional organizations including dentistry. Δ

Editor's Note: Excerpts from the final report of the Conference for Maintaining Professional Competence along with the recommendations will be published in future issues of the Journal.

Federal/Provincial Health Council meets in Winnipeg

The Federal/Provincial Dental Health Council recently held its ninth annual meeting in Winnipeg, Manitoba.

The Council consists of the dental directors of the federal, provincial and territorial governments. The Council first met formally in 1980 in Regina and has subsequently met in Toronto, Charlottetown, Ottawa, Victoria, Quebec City, Calgary and St. John's. Since 1982, a representative of the Canadian Dental Association has also attended a portion of the meeting.

The Council constitutes a very useful forum for members to share program information, policy development and strategic planning techniques while openly communicating with organized dentistry. It offers dental directors the opportunity to exchange ideas, study common problems and compare experiences.

During its history, the Council has recommended the reinstatement of a Fluoridation Officer with the Canadian Dental Association. It has advised

manufacturers of dental hygiene products that the frequency of recall dental examinations should be based upon epidemiological data and an individual's clinical need. Thus, references to "visit your dentist every six months" are not scientifically based and may mislead the public. For the same reasons, the Council has revised its position from a policy of routine six monthly radiographs to one of radiographs only when there is a specific need. It has also examined its position with respect to an approach to salaries for dental hygienists; and reviewed its position with respect to Capitation regarding arrangements made between some dental associations and provincial governments.

The Federal/Provincial Dental Health Council has regularly assessed and shared study findings for programming purposes. The body has a long history of support for public water fluoridation. Caries declines across the country have prompted the Council to assess public positions on water fluoridation, better public education, public health rinse,

brush-in programs and improved home care. The Council supports the appropriate use of dental sealants based upon studies which show the caries prevention benefit and cost effectiveness of this technique. Studies showing utilization patterns by children and dental treatment options for the elderly have been assessed for long range dental public health planning purposes.

This meeting, which was hosted by the Province of Manitoba, afforded Dental Directors and the President of the Canadian Dental Association an opportunity to further discuss areas of mutual concern and interest. Guest presentations were made to the group on the pros and cons of dental capitation plans, delivery of school based dental services, the role of the dental hygienist in public and private dentistry in Canada and geriatric dental care.

The Council will reconvene in Halifax in 1989. Δ



Participants in the Ninth Annual Federal/Provincial Dental Health Council in Winnipeg: From the Left: (Back Row) Dr. Bruce Bowden (Nfld.); Dr. John Blackmer (N.B.); Dr. Getty Jocys (N.S.); Dr. William Bedford (Health and Welfare Canada); Dr. Malcolm Williamson (B.C.); Dr. Jack Niedermayer (President, C.D.A.); Dr. Michael Lewis (N.W.T.); Dr. William Adams (N.S.); (Front Row) Dr. Sharat Doshi (Nfld.); Mr. Kelly Scobie (Sask); Dr. Peter Cooney (Chairman, MB.); Dr. Richard Huckstep (Yukon); Dr. Robert Romcke (P.E.I.); Dr. Benoit Lafontaine (Que.)

Vancouver 1989: Convention Countdown!!

CDA Exhibits: A learning experience — not just a trade show!



Michel Jahjah, DDS

Confirmations from our invited speakers at Convention '89 are now pouring in and the scientific program is rapidly taking shape! We have reserved a few pages of this edition of the Journal for highlights of our four limited attend-

ance courses. Read all about the issues of Restorative Dentistry that will be presented by Dr. Ron Jordan, and Linda Miles' session on Practice Management. Study the course outlines for the hands-on sessions conducted by Dr. Michael Goldfogel on Cosmetics and by Dr. Irwin Roseman on Endodontics. They will give you a first-hand, practical experience of the latest techniques in these two important areas of dentistry today.

The convention program will feature a wide variety of topics ranging from lasers to infection control. In addition, the Canadian Dental Assistants Association, the British Columbia Hygienists Association are developing a program which will make you glad you brought your staff to Convention '89.

Whatever your arrival plans may be, make sure to catch the Opening Ceremony on Sunday, August 27th. It will be a fun-filled extravaganza organized for the very first time at a dental convention in Canada!

For a long time, the scientific program was ranked first in the list of priorities of any convention participant. But, in the '80's, this billing is shared equally with another important aspect of the convention — the exhibits. Exhibits play a prominent role in the dentist's learning process. Materials, equipment and techniques make their very first appearance in an exhibition hall, before they are even discussed in the lecture room! An exhibition is the source from which an avant-garde dentist can draw new information, to analyze, adapt and absorb according to his or her needs. The exhibits for



Totem poles in Stanley Park, Vancouver

Vancouver '89 are currently being chosen with this objective in mind.

I have been told by dentists, hygienists and assistants that it is extremely difficult to schedule time for both the scientific program and exhibits. Taking in everything a convention has to offer is not an easy task! Those who are able to do it successfully say it is important to set aside a certain amount of time for both lectures and exhibits. This is why we have arranged the schedules to facilitate your planning tasks. Morning lectures will end at 11:00 and afternoon sessions will resume at 1:30, continuing until 4:00. The exhibits will remain open until 6:00 p.m. This schedule will allow you four and a half hours daily to visit the exhibits, without infringing upon the time you will want to dedicate to lectures. If, however, you wish to spend even more time in the exhibition hall, separate half-day lectures have also been scheduled to allow you a free morning or afternoon.

Exhibitors are not only salesmen. Their training and knowledge of materials or equipment place them in a position to



Butchart Gardens, Vancouver Island, a profusion of color!

help you with answers to your questions. Feel free to simply roam through the hall and visit with exhibitors for an informal discussion. Exhibitors, like you and I, welcome the opportunity to exchange ideas.

If you need materials or equipment, the convention is the ideal time to place orders. It is the best opportunity to "shop around" for better deals, better services, better quality and a better choice. Exhibitors, on the other hand, will satisfy their business goals and thus cover the many expenses incurred in attending the convention. From our perspective, their presence will enable CDA to offer its members the best convention ever held — for the advancement of dentistry!

Plan now to attend Vancouver '89 from August 27th to 30th and join us for the Convention countdown! △

Dr. Michel Jahjah,
General Chairman
CDA Conventions

Pre-Convention courses will match other aspects in interest and quality

There is every indication that the quality of the limited attendance pre-Convention courses and the Scientific Program to follow, will rank at least equally with the natural beauty and attractive facilities of Vancouver and the Convention's Social Program to make it a memorable and educational highlight in your dental career.

The four pre-Convention presenters are:

- *Dr. Ronald E. Jordan*: "Clinical Update on Esthetic Composite Bonding: Techniques and Materials."
- *Linda Miles & Associates*: Practice Management.
- *Dr. Michael Goldfogel*: Cosmetic Technique and Management Course. (Hands-on).
- *Dr. Irwin A. Roseman*: "A Better Prognosis Through Organized Endodontics." (Hands-on).

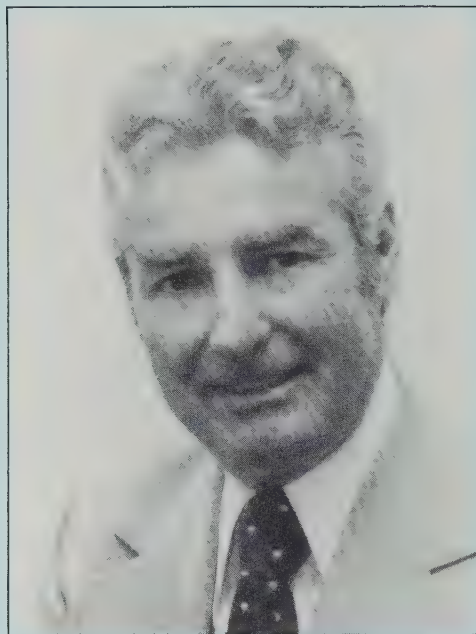
Dr. Jordan's Presentation

This course will deal specifically with update information on several important areas of general practice dentistry, namely:

1. Anterior composite materials: How to choose a new material with confidence. Microfills, macrofills and hybrids: indications; limitations; manipulative techniques; differential choice. The ideal composite material — What are we looking for? Have we found it? How do the present materials stand up?

Particular emphasis will be placed on light cured materials and manipulative variables involved in their use. Virtually all manipulative procedures have undergone radical change over the past few years — *preparation* techniques are entirely different from those taught a few years ago; *pulp protection* techniques and materials have also radically changed; phosphoric acid etching materials and techniques; bonding materials and procedures; insertion and finishing procedures have all been modified on the basis of long-term experience.

Since undercure is the most common



Dr. Ronald E. Jordan

cause of failure of photo-initiated composite restorations, variables in the light curing process, differential choice of lights and eye protection will all be discussed in detail as they relate to the general practitioner.

2. Dentin bonding agents: The phosphonated bond resins — Scotchbond, Bondlite, Creation Bond, J&J Dentin Bond — limitations; indications; manipulation; the current role of self cured and light cured in general practice will be presented in depth. The new dentin bonding systems, Tenure, Scotchbond II, Gluma and Panavia EX, will also be discussed.

The new fast setting *glass ionomer cements* and their current role in terms of anterior, posterior and geriatric applications will be explored. Four types of ionomer cements, namely: *lining*; *restorative*; *core*, and *luting ionomers* will be discussed in detail.

3. Posterior composite restorations: materials considerations; wear resistance; techniques sensitivity; pulp protection; indications; contraindications and differential choice will be covered in detail.

Six year recall observations on posterior composite materials will be presented and the current role of posterior composite materials will be identified together with



Dr. Linda Miles

indications and contraindications.

Four different types of posterior tooth coloured restorations will be presented, namely:

- a) direct placed materials:
Fulfil; P-50; Herculite XR; Adaptic II; Distalite; Heliomolar; Marathon; Status.
- b) direct hybrid inlays:
the Coltene DI systems.
- c) Indirect Composite Inlays:
Concept.
- d) Porcelain Inlays:
Cerate.

4. Conservative treatment of discoloured and malformed dentitions: Although general practitioners are faced with a universal decrease in the prevalence of dental caries, discoloured and malformed dentitions are encountered with increasing frequency. Accordingly, conservative techniques for the esthetic restoration of young dentitions afflicted with tetracycline staining; fluorosis; hypoplasia; white spot; diastema; and 'peg laterals' are assuming increasing importance. Five options of conservative treatment are open, namely:

1989 CDA Convention in Vancouver

- a) bleaching — both vital and non vital.
- b) direct composite veneers and bonding "add-on" techniques.
- c) combined bleach-veneer techniques.
- d) indirect composite veneers (Denta-color; Visio Gem).
- e) indirect porcelain veneers (Cerinate; Chameleon).

Indications; techniques and limitations for each option will be discussed and the results of long-term clinical trials relative to each will be presented.

Linda Miles & Associates

The topics of Linda Miles' presentation will be: 1) Set the stage for case acceptance. 2) Dental insurance. 3) Inventory control systems. 4) The three Rs of Motivation/Incentives. 5) How to attract and keep new patients — marketing tips. 6) Attract and hire a motivated staff. 7) Dress for success — dentists and staff.

Linda Miles launched her own career in dentistry in 1961 and is now an internationally recognized consultant, speaker and author on practice management and "team building". She established her own company, Dental Dynamics, Inc. in 1978.

Her speaking schedule has included the California Dental Association, the American Dental Association (ADA), and touring dental schools for the ADA on that organization's OPTIONS '87 Program. The ADA recently appointed her as a Consultant to its Council on Dental Practice and she also serves on the Successful Dental Practice Blue Ribbon Editorial Advisory Panel of the ADA.

In 1985, Linda founded the Dental Dynamics Institute, an outstanding training and finishing school for the dental business staff, located in Virginia Beach, Virginia.

She released her first book, Practice Dynamics, in 1986, and four months after publication, it was the publishers' number one best-seller. She is also the author of many articles on the subject of practice management and audio and video cassette and dental staff training programs. Linda is also consulting editor for Dental Management magazine, writing a monthly column entitled "Staff Notebook".

Linda says she will welcome the opportunity to present at the Convention and share her well-known philosophy that "Dentistry really can be fun, exciting and rewarding, for patients, dentists and staff".

Dr. Michael Goldfogel

Dr. Goldfogel, of Englewood, Colorado, in his presentation on "Cosmetic Technique and Management" will present the theory portion in his morning session.

In the afternoon, the hands-on session will include:

- A review of cosmetic dental materials. New developments in resin systems.
- Esthetic restoration placement. Diastema closure. Peg lateral. Free hand veneer, Indirect veneer. Cervical erosion. Posterior composite.
- Colour
Contour
Esthetic consideration
- Managing a cosmetic practice
- Hands-on
- Clinical case examples

Dr. Irwin A. Roseman

Dr. Roseman notes that "this seminar brings to the practitioner the principles necessary to perform predictable and effective endodontic therapy. Through step by step procedures, illustrations and case presentations, the participants will easily be able to incorporate these techniques profitably and efficiently into their practice".

His morning lecture presentation will consist of the following topics:

- Diagnosis
 - Radiographic interpretation clinical examination
 - Lateral and accessory canals
 - Predictable one appointment endodontics — when and how — reversible/irreversible
- Instrument length
 - The important step
- Instrumentation complete
 - Adequate access
 - Anterior/posterior instrumentation
 - Hand versus mechanical
 - K-file, Hedstrom, etc.
- Master Cone Placement and Completion

- Reviewing condensation methods
- Lateral, vertical, injectable, mechanical
- Gutta percha, paste, silver points

- Follow-up
 - A practice builder
- Post & Core
 - A better technique for the endodontically treated tooth
- Trauma
 - Current trends in treating endodontic injuries/step by step technique
- Dr. Roseman will conclude this session prior to the afternoon hands-on program.
- Miscellaneous
 - Use of Cavitron, use of Cavi-Endo, and a new method of warm lateral and vertical condensation.
- Hands-on participation
 - Molar endodontics — Participants will have the opportunity to cleanse, shape and obturate canals, using simulated tooth models.
- a) — Participants will be introduced to the use of the Endotec — a new technique — sensitive procedure.
- b) — Class size will be limited so each participant can be assured of individual attention to maximize this learning experience.
- c) — Participants are encouraged to bring cases (x-rays, models, case histories, etc.) for questions and discussion, at the conclusion of the formal part of the hands-on session.

Dr. Roseman is a 1967 graduate of the School of Dentistry, University of North Carolina. Following duty as a Dental Officer in the United States Army, he entered general practice. At the conclusion of his endodontics residency at the University of Detroit, he established his own specialty practice in 1979. He has lectured extensively on Endodontics throughout the United States and his papers have been widely published in national professional publications. He has been a part-time clinical instructor at the University of North Carolina School of Dentistry and at the University of Detroit.

Currently, Dr. Roseman is President of the North Carolina Association of Endodontists. Δ

Look for the advance registration and housing forms in the March Issue of the Journal.

Current regulatory status of Dental Implants in Canada

Health and Welfare Canada's Health Protection Branch has reported the current regulatory status of dental implants (as of the end of November 1988) to this Journal.

Since April 1, 1983, all new implantable devices have been subject to pre-market review and must obtain a Notice of Compliance before being sold in Canada. This may be obtained by submitting to the Director, data substantiating safety and efficacy of the device.

However, from time to time some products enter the market without going through the proper regulatory process. Recent concerns regarding dental implants being sold in Canada have prompted the Branch to request safety and efficacy data from all those manufacturers that could be identified to date, in this device class.

Appendix 1 has been provided to enable the Dental Profession to be made aware of the devices that are authorized

for sale in Canada as of November 30, 1988.

Individuals wanting to know the status of a new product or wanting to have a copy of the Medical Devices Regulations, may address their inquiries to the Pre-market Review Section, Premarket Division, Health Protection Branch, Health and Welfare Canada, Sir Frederick G. Banting Research Centre, Ross Avenue, Tunney's Pasture, Ottawa, Ontario, K1A 0L2, or call (613) 954-0386. Δ

Appendix 1

As of November 30, 1988, the following manufacturers have provided data on safety and efficacy and have permission to sell their products in Canada.

Please note that the issuance of a Notice of Compliance authorizes the unrestricted general sale of the device, whereas issuance of a Clinical Trial Status constitutes permission to sell the device to designated clinical investigators *only*.

Manufacturer: Anchor Implant Ltd.
Device: Anchor Dental Implant System
Clinical Trial Status granted until September 1989.

Device: Anchor 1 Hydroxyapatite Coated Dental Implant
Clinical Trial Status granted until June 1989.

Manufacturer: Bone Anchorage Systems Inc.
Device: Dental Implant-Self Tapping Screw
Clinical Trial Status granted until July 1989.

Manufacturer: Calcitek Inc.
Device: Calcitite RM
Notice of Compliance issued November 27, 1984.

Manufacturer: Collagen Corporation
Device: Osseodent Dental Implant
Clinical Trial Status granted until August 1989.

Manufacturer: Core-Vent Corporation
Device: Core-Vent Implants (non-sterile)
Core-Vent Implants (sterile)
Micro-Vent Implants (sterile)
Micro-Vent (Hydroxyapatite Coated) Implants
Screw-Vent Implants (sterile)
Swede-Vent Implants (sterile)
— Included are various attachment systems.

Notices of Compliance issued March 31, 1988.

Device: Sub-Vent Implants (sterile)
Clinical Trial Status granted until April 1989.

Manufacturer: Interpore International Inc.

Device: Interpore IMZ Implant System (Mechanical Attachment)

Notices of Compliance issued January 6, 1987.

Device: Interpore 200: Sterile Granules
Alveolar Ridge Augmentation
Anterior Curve
Posterior Block
Unshaped Block
Alveolar Ridge Maintenance
Granules for Repair of
Periodontal Defects
Rectangular Wedge
Pyramidal Wedge
Crescent Wedge

Notices of Compliance issued March 8, 1985.

Device: IP200 Malar Onlay
IP200 C-F Rectangle
IP200 C-F Curve 90R
IP200 C-F Curve 45R
IP200 Granules
IP200 Rectangle
IP500 Square
IP500 Rectangle

Notices of Compliance issued February 28, 1986.

Manufacturer: Nobelpharma Canada Inc.

Device: Biotes Osseointegration Dental Implant System

Notices of Compliance issued October 30, 1986 (non-Sterile), and June 30, 1987 (sterile).

Manufacturer: Orthomatrix Inc.
Device: Hydroxyapatite Models
HA-1000 and HA-500.

Notices of Compliance issued October 15, 1985.

Manufacturer: Sterling Drug Inc. (Cook-Waite Laboratories Inc. Division)

Device: Alveograf — Alveolar Ridge Bone Grafting Implant Material
Notice of Compliance issued March 8, 1985.

Device: Periograph (Durapatite Particulate 40-60 Mesh) Implant
Notice of Compliance issued July 11, 1988.

Forces require high oral health standard

A recent incident involving the dismissal of a Canadian serviceman for a dental problem emphasized the high overall dental health standard maintained for would-be recruits and serving members of the Canadian Armed Forces.

A news story circulated across Canada was an account of a serviceman released because he had an "overbite".

The serviceman appealed his dismissal to the Canadian Human Rights Commission because he claimed he was discriminated against. . . . "because of his overbite".

The news item stated that "he was released even though both military and civilian authorities agreed that he did not have any functional problems. A dentist retained by the (Human Rights) Commission also found that (his) overbite didn't interfere with his ability to serve in the Forces".

The account noted further that the Canadian Forces policy will not admit individuals to the ranks if they have an "overbite".

Group of 'fit people'

Brigadier General J. Fred Begin, Director General of the Canadian Armed Forces Dental Services told this Journal that like the Royal Canadian Mounted Police Canadian servicemen and women are "a group of fit people". To be allowed into the ranks an individual must undergo medical and dental examinations and meet standards indicating good overall health, including oral health.

If the candidate has missing teeth, which might create mastication difficulties or suffers from gross malocclusion and a resulting speech impediment, that person's application will be refused or deferred until the conditions have been corrected, the General said.

Such oral health defects can obviously inhibit the candidate's ability to serve efficiently in the Armed Services, he said. For example, if the oral problem has created a speech disorder, that would seriously interfere with the service person's effective functioning as a radio operator. Or, if he or she is not able to masticate normally, other serious physical health disorders could ensue.

In effect 'forever'

As to the history of these high standards, General Begin said "they've been in effect forever" — certainly since World War II.

He noted that during World War II, military authorities in the United States reported "more people were rejected (as candidates in the ranks of the military forces there) for dental health deficiencies than for any other reason."

Regarding the dismissed serviceman, the Human Rights Commission ruled that the Forces can't discriminate on the basis of such an oral disorder if it is not interfering with his efficiency as a serviceman.

Because the military and civilian

authorities found he had no functional problems, the serviceman has been reinstated at his former rank and given compensation.

General Begin said the policy regarding serving personnel and acceptance of new recruits has now been altered slightly. Now, he said, if there is no indication that a malocclusion creates or will create a speech or mastication disorder, the application will be considered. Δ

Obituaries/Nécrologie

Brunton, Frederic M.: pursued his undergraduate studies at the University of British Columbia and graduated in dentistry from the University of Oregon Dental School in 1950. He conducted a practice in Vancouver for many years.

Eaton, Donald, who was a graduate of Dalhousie University in 1943, also served as a dental faculty member at Dalhousie. He practised in Halifax until retirement in 1979. He was a past president of the Nova Scotia Dental Association.

Easter, Leonard J. Dr. Easter was a graduate of the Royal College of Dentistry, Toronto, in 1926. He conducted a Hamilton area practice for many years. He was a past president of the Hamilton Dental Society.

Layton, Norman M. A veteran of World Wars I and II, he served with the Canadian Dental Corps in England. Dr. Layton received his dental degree from the University of Toronto in 1921. He practised in Truro, Nova Scotia, for 58 years. He was a Life Member of the Nova Scotia Dental Association.

Leslie, S.W. Dr. Leslie was a graduate of the Royal College, Toronto, in 1924. He conducted a practice in downtown Toronto for many years. He was a Life Member of the Canadian Dental Association.

Sarbit, Samuel W. received his DDS degree from the University of Minnesota in 1936. He was also a graduate of the University of Alberta, in 1937. He set up a practice in Winnipeg, Manitoba in 1937. He served during World War II with the Royal Canadian Dental Corps. He was a Life Member of the Manitoba Dental Association.

Scott, R.L. Dr. Scott graduated from the University of Toronto in 1943. He practised in Brantford, Ontario. He was a Life Member of the Canadian Dental Association.

Steen, Manley Roy. Dr. Steen saw service in World War I and then graduated in dentistry from the University of Toronto in 1925. He practised for over 50 years in Winnipeg, retiring in 1977. He was a Life Member of the Winnipeg Dental Society and the Manitoba Dental Association.

Alberta Dental Association produces quality video

A Task Force of the Alberta Dental Association developed an outstanding eight-minute videotape as part of its submission to the Premier's Commission on Future Health Care for Albertans. The visual presentation on November 14, 1988 was a follow-up to a written submission. It vividly portrayed the "Challenge of the Future".

The video covered a full range of dental health topics — fluoridation, the aging population, the needs of children, economic barriers, research requirements and infection control measures — stressing throughout that dental health is an integral part of the entire community's quality of life.

The use of superb cinematography conveyed an effective and concentrated message related to future dental needs. Particular emphasis was directed to the requirements of a new dental facility that would be fully integrated with a Health Science Complex.

In pledging its own cooperation, the Alberta Dental Association emphasized to the Commission that all society must become active participants in the overall planning process if a consistent approach is to be developed.

Members of the Task Force were; Drs. Bruno Martinello, R.D. Sandilands, G.W. Thompson, E.F. Allison, C. Pendleton, J.A. Scott, Mr. R.O. Burgess and Mr. R.J. Duke. Further information regarding the videotape may be obtained from Dr. Bruno Martinello, Executive Director, Alberta Dental Association, telephone, (403) 431-1012. Δ

FDI distributes AIDS leaflets to members worldwide

New Working Group as part of FDI AIDS initiative

An illustrated leaflet designed to help practising dentists identify patients who may be suffering from AIDS is being sent, as a benefit of membership, to all dentists around the world who are Supporting Members of the Fédération Dentaire Internationale (FDI), the worldwide organization for dentistry.

Entitled "Oral lesions in patients with HIV infection", the leaflet has been prepared by Professor Jens J. Pindborg (Denmark) and a team from the WHO Collaborative Centre for Oral Manifestations of the Human Immunodeficiency Virus, in co-operation with the FDI.

Its distribution to all FDI Supporting Members is part of the FDI's "AIDS initiative" which is intended to inform the dental profession worldwide about the AIDS epidemic and its implications for dentistry.

A programme of slides for use in dental education and training has also been prepared by Professor Pindborg and is being made available to FDI Member Associations and Affiliates for US\$ 60 per set. Bibliographies of recent literature about AIDS are also planned.

A further important part of the FDI AIDS initiative is the new FDI/WHO Joint Working Group on AIDS, which was formally constituted at the World Dental Congress in Washington, last October. This Group is led by Dr. Terry Cutress (New Zealand), Chairman of the FDI's Commission on Oral Health, Research and Epidemiology.

All the FDI member associations in 77 countries were asked to appoint National AIDS Collaborators. These are establishing contact with experts in each country who are working on the AIDS issue and passing all information to the new Working Group. The Group will collate the data and disseminate appropriate information to dentists in each country via the National AIDS Collaborators. Δ

CDA Retirement Savings Plan

Unit values: (Funds are valued weekly)

Fund	Unit values as at	
	December 31, 1988	November 30, 1988
Bond & Mortgage Fund	63.62817	63.07486
Common Stock Fund	14.15282	13.63254
Money Market Fund	42.72168	42.31790
Balanced Fund	26.00630	25.54435

Interest rates:

G.I.C. Fund Term	*Interest rates as at	
	December 31, 1988	November 30, 1988
1 yr	10.85%	10.35%
2 yr	10.80%	10.35%
3 yr	10.80%	10.60%
4 yr	10.80%	10.60%
5 yr	10.80%	10.60%

(*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

December 31, 1988	November 30, 1988
\$99,260,811	\$97,141,069

For further information:

Write:

CDSPI

Retirement Services Dept.
Suite 600
2 Lansing Square
Willowdale, Ontario
M2J 4Z3

or phone, toll-free:

Western and Atlantic Canada
and Ontario Area Code 807
only 1-800-268-5418
Quebec and Ontario, (except Area
Code 807) 1-800-268-3411
Metro Toronto Area 497-7117



Dental Awareness programs win awards

The Canadian Dental Association's First Teeth Program and the "Five Point Prevention Plan" of the 1988 Dental Health Month campaign took first and second prizes, respectively, at the Health Care Public Relations Association (Canada) awards banquet last fall.

The Annual Hygeia Awards program, sponsored by HCPRA, recognizes excellence in health care communications across Canada. Both entries were placed in the educational communications programs category.

First Teeth won top honours for its "consistently high quality presentation with excellent visuals and content". A dental health care booklet and growth chart for parents of children up to age nine, First Teeth addresses commonly asked questions and concerns.

The 5 Point Prevention Plan materials promote healthy habits to keep teeth good for life — from maintaining healthy teeth and gums, to proper diet and regular check-ups.

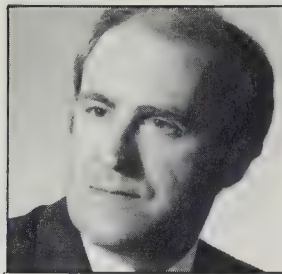
The materials were distributed as part of the Dental Health Month '88 campaign. Judges called the 5 Point Prevention Plan "a well conceived and executed program". △

At a meeting of the Board of Directors of l'Ordre des dentistes du Québec on December 2, 1988, Executive Committee members were elected for the 1988-89 term to serve along with Dr. Marc Boucher, ODQ President through 1989-90. △



Executive Committee members in the picture are, from the left: Dr. Guy Boyer, Dr. Robert L'Heureux, Dr. Marc Boucher (ODQ President), Dr. Clyde Covit (Vice President) and Mr. Raymond Boulay.

Three prominent dentists from Atlantic Canada have been named officers of the International College of Dentists.



Dr. John Robertson of Summerside, Prince Edward Island, a recent Past-President of the Canadian Dental Association, is now President-Elect of the International College.



Dr. Donald E. Williams, of Moncton, New Brunswick, also a CDA Past-President, has been elected as Regent, Zone 7, for Eastern Canada. Dr. Williams is President of the New Brunswick Dental Society.



Dr. John Christie, a recent CDA Governor, of Bedford, Nova Scotia, has been named Deputy Regent, Zone 7, for Eastern Canada. △

Belleville (Ont.) and Quinte Region dentists are highly supportive of the aims and objectives of the Canadian Fund for Dental Education (CFDE). Last fall, members of the Belleville and Quinte Chapter of the Academy of General Dentistry donated the sum of \$4,400 to CFDE. CFDE officials extend their thanks to Chapter President Dr. W.C. Rajan and the other 16 members of his group who donated the funds. The money will allow the CFDE Board of Trustees to approve additional worthwhile projects for 1989. △

The George Hare Endodontic Study Club recently held a dinner to commemorate the organization's 40th Anniversary. All past presidents were invited to the Toronto event and were awarded certificates of appreciation and lapel pins.

The chairman of the event was the current President, Dr. Wayne Pulver. A special guest was Mrs. Ann Hare, wife of the late Dr. George Hare. Other notable figures at the dinner were: Dr. Barry H. Korzen, Head, Department of Endodontics, University of Toronto; Dr. Lorne Chapnick, President of the Canadian Academy of Endodontics and Dr. Barry Chapnick, President of the Ontario Society of Endodontics and Academy of Dentistry, Toronto.

During the event, retrospective presen-

tations were delivered by Dr. Arthur Arshawsky and Dr. John Phillips and a 1949 movie, produced by the late Dr. George Hare, Chairman of the Department of Endodontics, University of Toronto, from 1945 to 1970, was screened. Honorary Life Memberships in the Study Club were presented to Dr. E. Charles Aho and Dr. John Storms, two longtime members of the Club who have contributed greatly to the advancement of endodontics. △



At the 40th Anniversary of the George Hare Endodontic Study Club, Dr. Lorne Chapnick, left, President of the Canadian Academy of Endodontics, greets Dr. Wayne Pulver, President of the George Hare Endodontic Study Club.

THANK YOU

TO OUR BUSINESS AND ASSOCIATION SUPPORTERS FROM THE CANADIAN FUND FOR DENTAL EDUCATION

Special appreciation is extended to those companies and organizations which have contributed major gifts of \$1,000 or more to our 1988 campaign.

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FOUNDING MEMBERS \$10,000 – \$24,999

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Belleville and Quinte Region Dentists

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Dental Depot Ltd.
International College of Dentists, Canadian Section
Johnson & Johnson Inc.
Manitoba Dental Association
Royal College of Dental Surgeons of Ontario

The CFDE's Trustees also wish to express their gratitude for the many smaller gifts received from various organizations. All donors who have contributed \$100 or more are listed in the Fund's Honour Roll which will appear in the April issue of the JCDA.



Remember



it
pays
to
join
CDA



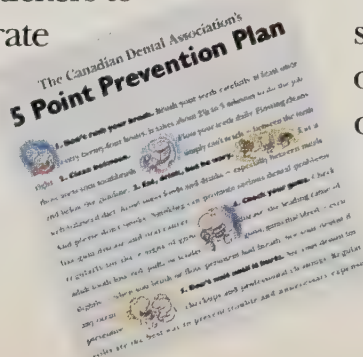
Let's Celebrate!



Dental Health Month is coming. Get ready for the celebration!

Last year we introduced you to **Bob** and the **5 Point Prevention Plan** for Dental Health Month.

This coming April they're back on table talkers, balloons, wallet cards, buttons and bumper stickers to help Canadians celebrate that most warm and appealing proof that good dental health pays off—the **SMILE**.



Dental Health Month '89 is going to be **A Celebration of the Smile**, and we invite everyone to join us in the fun.

As dental professionals there's a lot you can do to make this celebration a rousing success. Throw a **Keep Smiling party!** Start a **Keep Smiling parade!** Send **Bob Balloons** to the Mayor! Organize a **Keep Smiling Fun Run challenge!**

And if **Keep Smiling** table-talkers, buttons, balloons and bumper stickers are not enough to keep your community smiling, then watch for the January issue of the *Journal* for an announcement of some unique celebration tools.



DENTAL HEALTH MONTH '89

A Celebration of the Smile

Dental Health Month '89 is **The Celebration of the Smile! Keep Smiling** table talkers, balloons, posters, buttons, bumper stickers . . . they're all back again because they proved so popular last year. And there's more -- T-shirts, golf shirts...and an exciting new poster.

Dress up! Decorate! Give Away! But...Celebrate the Smile in your office and community!

Poster Event

An extraordinary new Dental Health Month poster featuring an original interpretation of **A Celebration of the Smile** by a well-known Canadian illustrator. This is bound to be a collector's item.

size: approx 18" x 24"

CDA members: \$2.00

Non-members: \$4.00



Table-Talker

Size: 7" x 8" (shipped flat)
folds to 3 1/2" x 8"

CDA members : \$0.50

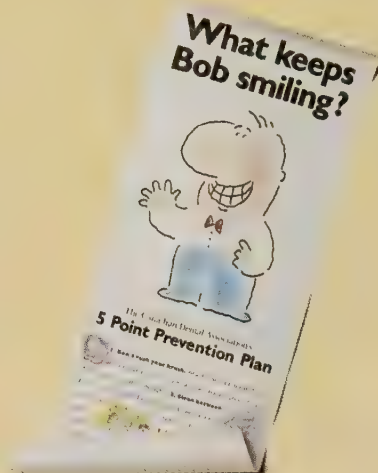
Non-members: \$1.00

Bob Poster

Size: 12 1/4 " x 36"

CDA members: \$1.00

Non-members: \$2.00



Bob's Radio Commercial

A 30-second public service announcement for use by all local and regional media relations organizers during Dental Health Month.

CDA members: \$8.00

Display Balloon

Size: 40" round, white

CDA members: \$7.00

Non-members: \$14.00



Two special order items:

Display Bob and the Keep Smiling Banner will be made available for Dental Health Month if the CDA receives sufficient orders.

Display Bob

Another first for Dental Health Month -- a 5' 3" free-standing

Display Bob! Patients will be warmed by his smile as they arrive for their appointments.

CDA members: \$50.00

T-Shirts

One size only -- Xtra large.

CDA members: \$12.50

Non-members: \$25.00



Golf-Shirts

Available in S, M, L, XL.

CDA members: \$25.00 ea.

Non-members: \$50.00 ea.

Sweatshirts

Also available in S, M, L, XL.

CDA members: \$30.00

Non-members: \$60.00





Balloons

Size: 10" round, white. (Pkg. of 50)

CDA members : \$6.50

Non-members: \$13.00



Buttons

Size: 1 3/4" round. (Pkg. of 25)

CDA members: \$5.00

Non-members: \$10.00

FREE '89 Planning Kit

For community organizers. A helpful guide to celebrating **The Smile** in your community this April. Activity ideas, media relations tips and more...

Magnetic Bob

Give him to patients for their refrigerators, file cabinets or office equipment.

CDA members: \$0.75

Non-members: \$1.50



Stickers

Size: 1 3/4" round, peel-off back paper.

(Pkg. of 100)

CDA members : \$12.00

Non-members : \$24.00



Wallet Cards

Size: 3 5/8 x 3 3/4" (shipped flat)

folds to 3 5/8 x 1 7/8". (Pkg. of 500)

CDA members : \$15.00

Non-members : \$30.00

Contact the CDA Order Section for information on personalization.



Bumper Stickers Size: 11 3/4" x 2 7/8"

CDA members : \$0.50 Non-members: \$1.00



Keep Smiling Banner

The widest **Bob** and **Keep Smiling** yet. Now there is a 3'x8' banner that can stretch across main street as the finishing line for a Miles of Smiles Run or serve as a backdrop for a display table.

CDA Members: \$75.00

Order your Dental Health Month materials today by mail or use our new toll-free lines!

1. By mail: Complete and mail the attached form along with your cheque, money order or VISA/ Mastercard number.

2. By phone : Call our NEW toll-free numbers to place your order:

1-800-267-6364 (Eastern Canada except area code 709) or

1-800-267-6354 (Western Canada and area code 709)

Please have your VISA or Mastercard number and expiry date ready.

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Order Section, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6

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Telephone:

CDA Membership Number:

()

☐ Cheque / money order enclosed ☐ VISA ☐ Mastercard

Number:

Expiry date:

Item	Quantity	Unit \$.		Total
		Mem.	Non Mem.	
Bob Poster		1.00	2.00	
Buttons (Pkg. of 25)		5.00	10.00	
Bumper Stickers		0.50	1.00	
Stickers (Pkg. of 100)		12.00	24.00	
Table-Talkers		0.50	1.00	
Poster Event		2.00	4.00	
Magnetic Bob		0.75	1.50	
Wallet Card (Pkg. of 500)		15.00	30.00	
Balloon (Pkg. of 50)		6.50	13.00	
Display Balloon		7.00	14.00	
T-Shirt		12.50	25.00	
Sweatshirt* S M L XL		30.00	60.00	
Golf Shirt* S M L XL		25.00	50.00	
Radio Commercial		8.00	16.00	
Planning Kit		Free	Free	

Special Order (Only available if sufficient orders are received)

Display Bob		50.00	n/a	
Banner		75.00	n/a	

*Please circle shirt size

Sub Total

Please allow 4 - 6 weeks for delivery.

Ontario residents please add 8% PST

Shipping

TOTAL



Dental care for the handicapped patient

Les soins dentaires pour handicapés

1. "Access: meeting the needs of special patients." *Journal of the American Dental Association*. Mar. 1988, v. 116, no. 3, pp. 319-27.
2. Bickley, S.R. "Dental care for the mentally handicapped — a duty or pleasure?" *Dental Health*. Feb-Mar. 1988, v. 27, no. 1, pp. 3-4.
3. Friedlander, A.H. and Gorelick, D.A. "Dental management of the cocaine addict." [Review article] *Oral Surgery Oral Medicine Oral Pathology*. Jan 1988, v. 65, no. 1, pp. 45-8.
4. Gleason, C., Hops, S. and MacMillan, K. "Dental care for disabled adults." *Canadian Nurse*. Mar. 1988, v. 84, no. 3, pp. 21-3.
5. Goldstein, H. "Utilisation of health services for a one-year period by an adult population with Down syndrome." *Danish Medical Bulletin*. Feb. 1988, v. 35, no. 1, pp. 100-4.
6. Herod, E.L. "An agoraphobic patient with dental anxiety: report of a case." *Journal of the American Dental Association*. Jun 1988, v. 116, no. 7, pp. 860-1.
7. Hicks, T., Knipe, C. and Mezenberg, N. "The accessibility and availability of dental care to ill, elderly and handicapped residents of Simcoe County." *Canadian Journal of Community Dentistry*. Winter 1988, v. 3, no. 1, pp. 22-31.
8. Hulsebosch, C. "Access through mobility." *Florida Dental Journal*. Spring

- 1988, v. 59, no. 1, pp. 4-5, 9-10, 43.
9. Jackson, B. "Dental implications of Alzheimer's disease." *Ontario Dentist*. Feb. 1988, v. 65, no. 1, pp. 22-4.
10. Johnson, W.T. and Leary, J.M. "Management of dental patients with bleeding disorders: review and update." *Oral Surgery Oral Medicine Oral Pathology*. Sept. 1988, v. 66, no. 3, pp. 297-303.
11. Katz, J.O. and Terezhalmay, G.T. "Dental management of the patient with Hemophilia." *Oral Surgery Oral Medicine Oral Pathology*. Jul. 1988, v. 66, no. 1, pp. 139-44.
12. Naylor, G.D. and others. "The patient with chronic renal failure who is undergoing dialysis or renal transplantation: another consideration for antimicrobial prophylaxis." *Oral Surgery Oral Medicine Oral Pathology*. Jan 1988, v. 65, no. 1, pp. 116-21.
13. Nunn, J.H. and Murry, J.J. "Dental care of handicapped children by general dental practitioners." *Journal of Dental Education*. Aug. 1988, v. 52, no. 8, pp. 463-5.
14. O'Donnell, D. and Crosswaite, M.A. "Dental health education for mentally handicapped children." *Journal of the Royal Society of Health*. Feb 1988, v. 108, no. 1, pp. 8-10.
15. Schroeder, J.R. "Caring for special populations in the dental office." *Virginia Dental Journal*. Jan-Mar. 1988, v. 65, no. 1, pp. 17-28.
16. Sigal, M.J. and others. "A survey of a program for the dental care of disabled adults." *Canadian Dental Association Journal*. Feb. 1988, v. 54, no. 2, pp. 103-6.
17. Sonis, S. and Kunz, A. "Impact of improved dental services on the frequency of oral complications of cancer

- therapy for patients with non-head-and-neck malignancies." *Oral Surgery Oral Medicine Oral Pathology*. Jan. 1988, v. 65, no. 1, pp. 19-22.
18. Spencer, P.R. "Techniques for transporting the handicapped patient in the dental setting." *Dental Assistant*. Jan-Feb. 1988, v. 57, no. 1, pp. 16-18.
19. Webb, S. and others. "Fetal alcohol syndrome: report of a case." *Journal of the American Dental Association*. Feb. 1988, v. 116, no. 2, pp. 196-8.
20. Whittle, J.G. and others. "The dental health of the elderly mentally ill: the carers' perspective." *British Dental Journal*. Mar. 5, 1988, v. 164, no. 5, pp. 144-7.
21. Williams, N.J. and Schuman, N.J. "The curved-bristle tooth brush: an aid for the handicapped population." *ASDC Journal of Dentistry for Children*. Jul-Aug. 1988, v. 55, no. 4, pp. 291-3.

One copy of the above articles is available for \$5.00 to all CDA members and for \$10.00 to non-members. This bibliography was generated with the help of MEDLARS.

24-Hour Library Service

As a convenience to CDA members and dental personnel in the various time zones of Canada, it is now possible to telephone at any time of the day or night and leave a message or make a request for Library/Resources Centre services. Library personnel will respond with replies or materials.

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La bibliothèque de l'ADC offre pour 5\$ à ses membres et pour 10\$ aux non membres une copie des articles ci-dessus. Cette bibliographie a été préparée avec l'aide de MEDLARS.

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Pour mieux servir les membres de l'ADC et du personnel dentaire qui habitent divers fuseaux horaires du Canada, la Bibliothèque et le Centre de documentation de l'ADC offrent maintenant un service téléphonique de 24 heures. Le personnel s'empressera de répondre à toute demande qu'on pourra lui adresser.

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Practice Prosperity 1989

Part Two: Leadership

Three dentists recently responded to this question of leadership in uniquely different ways. The most senior dentist felt that his natural leadership style was traditional and authoritative. He stated that increased awareness and more staff involvement had helped him modify his style but he still found it difficult to delegate authority. He felt that he had enjoyed a very fulfilling life as a result of being a dentist.

The most recent graduate in the group felt that her major role in the practice was to set the pace. She didn't feel that she always had to have "control" and that teamwork and positive relationships with clients would help her achieve the practice goals. Quality of practice life was a bigger issue for her than financial rewards and she believed that one would lead to the other.

The third dentist, with twenty years of practice experience, said that teamwork took time but it worked. A dilemma, however remained. In the final analysis, he was still responsible for everything . . . ethically, professionally and financially. He didn't feel that leadership should be delegated so much as shared. His practice was very successful and the prosperity spilled over into other areas in his life where he enjoyed the fruits of the labour.

What is leadership? Organizational consultants define leadership as the ability to lead. It is nurtured in childhood, suppressed or supported in school and university, and forged in the real world of success and failure.

Leadership is the end result of four rights:

1. The right livelihood . . . nurtures leadership that comes from a deep, abiding sense that dentistry is the right profession. When we are able to "stand alone", consciously making choices and creatively using our talents and skills, our work has meaning.

2. The right environment . . . develops leadership that is fostered by clarity in our choices. Whether initially or through trial and error, each dentist



Claudia Anderson, RDH

must find a supportive, nurturing environment. This choice becomes clearer the better we understand ourselves. It really depends on our style, talents and values. Finding the right environment often means making uncommon or uncomfortable choices.

3. The right reasons . . . foster leadership that can be communicated to others because it has been internalized. One individual's reasons are not the same as another's. Discovering those reasons for ourselves is what will keep us going on the bad days.

4. The right rewards . . . fuel leadership that is self-sustaining. When rewards meet our needs for recognition, security, respect, achievement or understanding, we are prosperous within. When rewards allow us to live our lives according to our values, we can share that prosperity with family, friends, staff and clients.

When these four rights are in-place, we have a strong foundation for leadership development. **Leadership begins with the dentist being in harmony with his/her profession and himself/herself. This is not part of the course curriculum in most dental programs and it's certainly not a subject that fits easily into a one day continuing education**

course. It is a long-term process that begins with self-awareness.

All three dentists interviewed had these four rights in-place although each one had a different perspective. As they created the vision, the message could be shared with staff and clients. This process is called alignment or congruence.

In practice management, alignment of vision can be monitored based on the following criteria:

1. Technical, clinical and scientific competency . . . the foundation without which, we have nothing of value to offer our community.

2. Social and communication competency . . . the ability to share our number one competency with our clients, and build long term relationships.

3. Professional competency . . . the sense that we are part of something that is bigger than ourselves and as professionals, we are people with humanity and ethics.

4. Emotional competency . . . the substance that allows us to identify our feelings and share them with others. This ability creates congruency between what we say and how we act and creates trust. When incongruity exists between our real selves and our role as leaders, we become stressed and stress effects our relationships with others. Of all the competencies, the emotional side of leadership impacts most profoundly on practice prosperity.

No matter how we define our work, no matter how we choose to practice or where, the guiding force within long term prosperous dental practices is a leader "in process". And like life, he or she is ever changing.

"As Naisbitt and Aburdene state, "Ultimately, the vision gets translated into sales and profit growth and return on investment, but the numbers come after the vision. In the old style companies, the numbers are the vision". Δ

Claudia Anderson is President of Anderson Programs Inc., Vancouver, B.C. She graduated from the University of Manitoba in 1965 with a R.D.H. and is presently a masters candidate in educational psychology. Claudia lectures part-time at the University of British Columbia, Faculty of Dentistry. Anderson Programs Inc., is a consulting company that works with dentists in the area of strategic planning and practice management.

INTRODUCTION TO BIOPROGRESSIVE THERAPY

Author: Eiichiro Nakajima, DDS
English version edited by
Victor C. West, MDSc., D.Orth.,
DDO

Publisher: Quintessence Publishing Co. Ltd.
Chicago 1987
166 pages, \$72.00 US

Bioprogressive therapy has not enjoyed widespread acceptance among the North American orthodontic community because the technique involves a rather complex series of wire manipulations. Nakajima attempts to dispel some of the mystique about the protocol by illustrating a text that reveals sufficient technical detail about each phase of the system. His philosophy is analogous to that of his patron, a 17th century Japanese master builder Miyamoto Musashi, who stated that the proper use of one's tools was the epitome of art form. He notes that previous orthodontic textbooks concentrate on the strengths, weaknesses and shape of the pliers but do not clarify their actual use as his textbook does.

The book is not organized as the classical textbook with didactic chapters about specific topics, but rather as a series of excellently reproduced photographs complemented by brief descriptions. Extensive use is made of high quality black and white photographs in the first section (90 pages containing 532 figures) which outline the step-by-step technique of bending each arch wire in the classical version of this segmental treatment philosophy. Proper plier manipulation and technique are emphasized and, for practice, there is a wire bending card that contains all the loops that are utilized with the bioprogressive technique. The objective is to fit practice work against the exactly proportioned outlines. With the popularity of the straight wire appliances, it is always good to go back to "roots" as a wire-bender and hone the skills that are occasionally rusted.

The second section of the book utilizes colour photographs to depict the application phase of the technique. The 57 pages with 220 colour plates depict the sequences involved in retraction, intrusion, and alignment as well as the application of various utility arches to assist in the orthodontic correction. This series of photographs of clinical patients shows both passive, active and resultant movement of the various segmental and continuous arch wires. Additional sequences portray correction of transverse, vertical and anterior-posterior discrepancies as well as the utilization of protraction headgear and habit appliances.

This book contains very little about the bioprogressive theory itself; however, it is designed to familiarize the orthodontic student with the skills to manipulate the wire to accomplish desired objectives. With the increased resiliency of the newer archwires some of the complex loop systems that are incorporated into the bioprogressive therapy have been superseded.

The value of this book is the wire manipulation protocols that cross any "system" presently available. Δ

This book was reviewed by:
Ken Glover, BSc, DDS, Cert Ortho
Chairman, Division of Orthodontics
University of Alberta

OCCLUSAL CORRECTION

Albert Solnit and
Donald C. Curnutte

Quintessence, Chicago, 1988
413 p., \$120.00

Occlusal Correction discusses the principles of gnathology and presents techniques for occlusal treatment that are based on those principles.

There are three parts and four appendices. Part 1 (Theory) considers basic information on the anatomy, physiology and pathophysiology of occlusion; Part 2 (Diagnosis) covers those particular diag-

nostic procedures that are favored by gnathology-oriented operators; and Part 3 (Treatment) discusses treatment goals, reversible occlusal treatment, treatment by selective grinding, treatment with restorative dentistry and an interesting speculative chapter on an occlusal etiology for gingival dehiscence and recession. The appendices are: Problem-Oriented Dental Record; Data-Base Resumé and Complete Problem List; Clinical Examination Guidelines; and Functional Analysis and Occlusal Adjustment Record.

The 86 page chapter "Occlusal Correction by Selective Grinding" is the core of the book. Indications and contraindications are discussed briefly, the prerequisites for successful grinding are considered, and a complicated and confusing technique for tooth grinding is presented. Many excellent color drawings and photographs are used to explain the procedure.

Each of the eight chapters in Part 1 is followed by a list of cited references, but the references are quite stale and dominated by the occlusal folklore of McCollum, Stuart, Stallard and a few others. Chapter nine ends with an Additional Reading List and there are neither references nor reading lists for the next 276 pages. In the Preface, the authors state that "... Our combined total of more than 40 years of training, practice, and teaching with Drs. Stuart and Peter K. Thomas is this text's foundation." In this age of burgeoning occlusion-related research and an increasing demand for scientific evidence of the efficacy of treatment procedures, it is inexcusable to justify what is touted to be "... the definitive text on occlusal correction by selective grinding. ..." by forty years of experience. Especially if no scientific evidence is presented to demonstrate the validity of the claims.

The text is preoccupied with geometry, lever systems, cusp-to-fossa relationships, tripodal contacts, condylar movements and articulators. The rationale for repositioning the patient in centric relation is questionable because the available

evidence suggests that most functional activity occurs anterior and lateral to centric occlusion and that chewing strokes begin and end in centric occlusion. It is known that, in at least 90 per cent of all adult occlusions, centric occlusion is anterior to centric relation; patients develop learned patterns of mandibular movement keyed to maximum intercuspatation and it would seem undesirable to change them rapidly and radically in order to satisfy an arbitrary occlusal scheme where CO and CR coincide in a frontal plane.

In defence of the authors, they do a fine job of presenting techniques based on gnathological principles, if not gnathological research. So, if one practices gnathology, the work is valuable. However, if one thinks that the whole gnathology school operates on basically false assumptions, this book is of little value and could be harmful to an impressionable reader. Δ

This book was reviewed by:
R.D. Oles, DDS, MS
College of Dentistry
University of Saskatchewan

KILLEY'S FRACTURES OF THE MIDDLE THIRD OF THE FACIAL SKELETON 5TH EDITION

by Peter Banks

1987 Butterworth and Company
(Publishers) Ltd.
136 pages with B&W photographs
\$17.00 US.

The fact that this book is in its 5th edition gives some idea as to its continuing popularity amongst medical and dental students and practitioners seeking to know more about this subject. It is also a good basic introduction for residents early in their training in maxillofacial surgery.

Like most British textbooks of its kind it is concise and to the point, filled with much useful information, and is interesting and easy to read. The illustrations are generally of good quality and pertinent to the text. Chapters are devoted to such topics as the incidence, etiology, and classification of midfacial fractures, anatomy, clinical findings, and the general and specific management of patients with midfacial trauma. A bibliography of useful articles is included at the end of the text.

Non-maxillofacial surgeons dealing in this initial management of patients with facial trauma will particularly appreciate the sections dealing with airway management and the control of hemorrhage.

The one chapter in my opinion that is the least useful is the one dealing with definitive treatment since the management of facial trauma in North America frequently differs from that in the United Kingdom. North American maxillofacial surgeons are less apt to use extraoral and craniomaxillary fixation and are more apt to use rigid internal fixation. In general, however, I found this to be an excellent introductory book and I would recommend it to dental practitioners and students wishing to gain a greater understanding of midfacial fractures. Δ

This book was reviewed by:
Dennis T. Lanigan, DMD, MD
Head, Division of Oral and Maxillofacial Surgery
University of Saskatchewan

DENTISTRY FOR THE CHILD AND ADOLESCENT 5TH EDITION

by Ralph E. McDonald and David R. Avery

1987, The C.V. Mosby Company, Toronto
937 pages with photographs, \$53.50

The 1987 edition of McDonald's "Dentistry for the Child and Adolescent" reflects the changes which have taken place in pediatric dentistry in recent years. Pediatric dentistry is more and more concerned with, amongst other fields, community dentistry, preventive dentistry, management of the handicapped and of the medically compromised, as well as with new fields, such as infection control and child battery.

The chapters devoted to classical didactic dentistry, such as restorative treatment, have been brought up to date, and include many new items, such as porcelain laminated veneers, the controversial Caridex caries-removal system and the composite restorations on posterior teeth. All the steps in restorative dentistry are well described and illustrated, as are pulpal treatments of primary teeth, where the use of diluted formocresol solution and glutaraldehyde are discussed. The chapter devoted to the management of traumatic injuries includes many of the new developments, such as the replacement of the broken coronal fragment, the

milk storage of avulsed teeth, and the role of antibiotics in preventing inflammatory root resorption.

The dental problems of the disabled child are thoroughly discussed. The management of the physically handicapped child, from the alterations of the office facilities to the chairside management of the various handicaps, cerebral palsy, deafness and blindness, are fully covered. So is heart disease, blood dyscrasia, AIDS, leukemia, and bone marrow transplantation.

One hundred and thirty-six pages are devoted to the growth of the face and the dental arches, cephalometrics, space management and minor orthodontics. Although not new, step by step descriptions of appropriate procedures will allow the interested practitioner to venture into interceptive pediatric orthodontics, and will allow the student to understand the why and the wherefor of the various interventions.

Complementing this section is a review of the needs of children born with a cleft lip and palate. The incidence of this deformity warrants the emphasis McDonald gives it.

The book always tries to be practical. For example, a radiograph protocol is suggested for the patient in relation to his age and his incidence of caries. An excellent up-to-date chapter is devoted to the pharmacological management of patient behavior including a good review of the current drugs.

There are some errors, although rare. For example, the author states that children with Letter-er-Siwe disease (histiocytosis X) "usually demonstrate a rapid downhill course resulting in death". This is no longer true, and the prognosis of the disease has improved dramatically in the last number of years. There are also some omissions, notably of the growing concern in North America regarding mild fluorosis found on young permanent incisors attributed to the intake of fluoride supplement at an early age.

This 900-page book is not a rehash of its earlier editions. It thoroughly covers all aspects of pediatric dentistry. It's excellent presentation and readability make it an invaluable book of reference for the student, the general practitioner, and the pediatric dentist. Δ

This book was reviewed by:
Stephane Schwartz, DDS, MSD
Associate Professor and Director of
Dept. of Pediatric Dentistry
Faculty of Dentistry
McGill University

Education re: Capitation

Your article in the November issue of the Canadian Dental Association Journal says it all about capitation. I hope every student in Canada reads this information many times. This should be distributed every year to the Universities. There have been many warnings about the ills of capitation, but this shows how bad it really is, for patients and dentists alike. I hope none of our young graduates have to experience the tragedy of being caught unwittingly in a capitation contract. I hope none allow themselves to be cheated by these so called entrepreneurs who could destroy this Profession or any other Profession for a fast buck. I don't think they will fall into this trap because I doubt anyone will struggle for 20 years of their lives to gain a good education in a respected Profession and then let themselves and the Profession down by adopting standards of treatment and ethics as low as those reported here. This kind of care would easily lead to loss of licence to practice. Why would anyone share their hard earned income with these business people. The motto of NO DENTISTS, NO CAPITATION is the right one.

We owe a vote of thanks to Dr. Rizk for sharing his unfortunate experience in such a meaningful way and to yourself for the vision to publish such a useful article. I hope none of our young dentists have to go through the emotional conflict that he had to deal with during his short sad experience. How lucky he was that he was not under a capitation contract. It would have destroyed him, ethically and likely financially. Δ

Philip Watson

*Professor, Department of Biomaterials,
Faculty of Dentistry
University of Toronto.*

Re: A Review of Differential Diagnosis of Dental Fluorosis and Non-Fluoride Enamel Defects. (October 1988 Vol. 54 No. 10)

As a dental practitioner treating paediatric patients in a non-fluoridated community I read this article with great interest.

Perhaps other dentists shared my concern with the statistics quoted for fluorosis in this article. To date I have

attempted to associate enamel opacities in my community's children with genetic or metabolic problems. I was amazed with the author's statement, "Although the communities studied and the conclusions on the current levels of fluorosis differed, there was no doubt that the condition being assessed was fairly common in children". Studies quoted the incidence of fluorosis to range from 14 per cent in non-fluoridated to 45 per cent of children in fluoridated communities.

The authors provide no explanation as to how one may reduce the risk of fluorosis. At what level of fluoride does one normally see mild-moderate fluorosis occurring? For example, should parents, physicians or even dentists feel guilty that the simple error of doubling a normal dosage may contribute to this dental defect?

In a society already experiencing lower caries rates, many individuals are questioning the value of fluoridation. After all, the prevention and treatment of dental decay is often easier than cosmetically correcting the problem of fluorosis. Δ

Paul MacDonald, DDS

*Paediatric Dentist,
Kingston, Ont.*

Dr. MacDonald's concerns

Thank you for your recent interesting comments and the appended letter relating to your correspondence with Dr. P.R. Crawford, Editor of the Journal of the Canadian Dental Association, regarding the article on Fluorosis.

I note that your first concern relates to the prevalence of enamel opacities and specifically those related to fluoride intakes. The variations in the reported prevalence of enamel opacities is so great that it is virtually impossible to quote a meaningful average. To compound this problem I do not know of any foolproof way of distinguishing between some enamel opacities due to fluorosis and those due to metabolic conditions without going into thorough histories. Even with reliable clinical information some of the opacities are very difficult to pinpoint from a standpoint of etiology.

It should be noted that most studies concur that the prevalence of these lesions is relatively high. Enamel opacities seem to be invariably higher in fluoridated than in non-fluoridated communities suggesting a role of fluoride in the development of this condition. Like you, I am concerned by the fact that in the

Lewis study of the Toronto children the prevalence of enamel opacities is as high as 34 per cent while in the more recent study which we have conducted it was more in the neighbourhood of 14 per cent. Who is right? I believe this is a function of the subjective criteria that each investigator develops and applies in his study. Our article in the October issue of J.C.D.A. referred specifically to criteria that would assist in a differential diagnosis of fluorosis and non-fluoride enamel defects. A subsequent article will deal with methods of how to reduce fluorosis. In non-fluoride areas the usual cause is over zealous application of systemic fluoride therapies particularly in those children who are ingesting significant amounts of fluoride in their water supply. In the Toronto area the level of enamel defects is significantly associated with the early introduction of fluoride dentifrices and to a lesser extent, use of infant formulas (a Master's study by Osuji, O.). Supervision of use of such dentifrices by young children in order to minimize ingestion is a method of reducing the risk of fluorosis.

You also asked the question as to what level of fluoride is associated with mild to moderate fluorosis? To the best of my knowledge, such levels of fluorosis are associated with ingestion of water containing 2 ppm of fluoride or higher. Using this guideline the factor of doubling the normal dose should not be viewed as a simple error as you suggest in your letter. From a practical standpoint I do not view the ingestion of fluoridated dentifrices as having a major public health significance.

On the basis of the higher prevalence of dental fluorosis in some segments of our population it would be undesirable to question the value of fluoridation. Fluoridation remains the most effective and least expensive method of prevention of dental caries. The level of fluorosis in the dentitions that I have seen in this area are cosmetically not that significant that they would require a correction. A potential exists for unacceptable levels of fluoride ingestion by the child population using many regimens that contain fluoride, such as dentifrices, rinses, varnishes and prophylactic pastes.

I hope that the above comments would be of assistance to you in placing some of your concerns into a proper perspective. Δ

Gordon Nikiforuk

*Professor
Faculty of Dentistry,
University of Toronto*

Re: AIDS and Gloves

A recent article published in an issue of *Oral Health* raises concerns that in some instances the wearing of gloves may spread infection during dental treatment.

The article was an open letter to the profession and begged a response. In fact an appropriate reply did accompany the original publication of the article in March, 1988. The response was from Dr. Garry Noble of the Centres for Disease Control in Atlanta, Georgia who noted that:

- The Centres for Disease Control recommend that all health care workers (HCWs) including dentists wear gloves when in contact with; blood, body fluids, mucous membranes, non-intact skin, or items or surfaces contaminated with blood or body fluids.

- The benefits of glove wearing by HCWs in reducing disease transmission during patient care have been well documented.

- There are no scientific studies which demonstrate that the wearing of gloves is hazardous or increases skin punctures.

- Tearing of a glove would be preferable to skin punctures which are always a potential hazard when rotary instruments are used.

- If a glove is torn during treatment it should be removed, the hand washed and gloved with a fresh glove.

By failing to include Dr. Noble's comments, *Oral Health* may have inadvertently fueled unjustified doubts and concerns among our colleagues.

This oversight illustrates that abstracting articles may be detrimental if it becomes too selective, which justifies the Journal of the Canadian Dental Association's proud tradition of publishing original scientific material. △

John Hardie, BDS, MSc, FRDC(C)
Chairman, CDA Ad Hoc Committee
on Infection Control

Re.: "Back Talk" Astrological Communiqué

Permettez-moi de vous signaler mon indignation suite à la publication de cet article sur l'astrologie dentaire dans votre édition du mois de novembre 1988.

Votre "Journal" a, je crois, un but d'information et d'éducation scientifique pour les membres de la profession dentaire et ne doit pas être mêlé à ces divagations rocambolesques.

La profession dentaire est et doit

demeurer sérieuse et surtout crédible. Si on se permet d'aborder l'astrologie, où s'arrêtera-t-on? Aura-t-on le droit bientôt à une chronique de recettes "dentaires" ou d'horticulture "dentaire"?

Lorsque j'ai lu votre éditorial en page 781 et qui était intitulé: "Ne Point Lâcher", je me suis dit qu'il y avait du sérieux dans votre Journal mais 81 pages plus loin, mes illusions se sont estompées...

En espérant que vous en tiendrez compte, je vous souhaite néanmoins de Joyeuses Fêtes. △

D^r Louis-René Charette

Dentisterie Pédiatrique

Membre de l'ADC

Reading the Journal "cover to cover"

I used to think that those people who wrote to the editors of various publications commenting on a particular issue and stating in conclusion that they had read the publication from "cover to cover" — had too much time on their hands.

I did this with the November 1988 issue of our Journal, and I commend you on the contents. The Editorial was a most significant comment for our changing times; the President's column was supportive; the coverage of the convention — complete with color — was first rate; the report by Mr. Neilson on the annual meeting was most informative; and the articles were pertinent and certainly of interest to me, eg. capitation, the law, practice modes for inmates, profiling, and infectious diseases, not to mention news briefs, meeting notices and book reviews.

Our journal should be a prime tool in the transmission of information to our profession, and with issues similar to this one, my prediction is that many more dentists will take the time to read all of it.

Congratulations on a job well done. △

G.S. Zwicker, DDS

Halifax, N.S.

Le SIDA; deux précisions touchant les précautions à prendre

J'ai lu avec intérêt l'article du D^r Tom Daley intitulé "Aids risk to dental personnel: a realistic approach." J'ai particulièrement apprécié sa tentative de démystifier la peur qu'ont certains professionnels den-

taires de contracter le SIDA au contact de patients infectés. Cette peur est nettement injustifiée comme en font foi de nombreuses publications médicales et dentaires sur le sujet, et toute attitude contraire des confrères ne saurait que ternir l'image de la profession dans la population générale. La démarche du D^r Daley m'apparaît donc tout à fait méritoire et doit être soulignée. J'aimerais cependant, comme complément à ses propos, apporter quelques précisions sur deux points qui ont attiré mon attention.

Le premier concerne l'un des paramètres évoqués dans le calcul du risque de contamination encouru par un dentiste ganté lors de traitements de patients séropositifs (une chance sur 20 à 400 millions). Il apparaît, à la lecture de l'article et dans l'esprit de l'auteur, que ce risque est essentiellement basé sur la présence d'un nombre présumé de porteurs chroniques du virus VIH (2 à 4 millions en Amérique du Nord), sur l'effet protecteur conféré par le port de gants (réduction de l'incidence par un facteur de 10 à 100 fois) et sur l'existence d'un cas isolé de dentiste ayant été infecté de façon professionnelle. Or, malheureusement cependant, rien ne nous permet d'affirmer, à partir d'une étude isolée, qu'il n'existe qu'un seul dentiste à l'échelle Nord-Américaine qui aurait contracté l'infection par exposition professionnelle. L'étude, rappelons-le, portait sur 1132 dentistes, 131 hygiénistes et 46 assistantes-dentaires exerçant dans la région de New-York¹. La littérature médicale fait d'ailleurs état d'un autre dentiste sidatique et actuellement possiblement décédé, qui aurait été identifié par les CDC comme l'un des 41 professionnels de la santé qui, en date de mars 1988 auraient développé le SIDA par exposition professionnelle². Manifestement donc, la prévalence des dentistes infectés a été sous-estimée par l'auteur.

Le deuxième point sur lequel je voudrais attirer l'attention concerne l'attitude de l'auteur sur certains principes relatifs au traitement des patients infectés, notamment sur l'inutilité de céder les patients en fin de journée, de travailler dans une aire isolée et de recouvrir chaise, cabinet, lampe, tête d'appareil photographique, etc. . . pour ne nommer que les aspects les plus importants. Cette attitude va manifestement à l'encontre des plus récentes recommandations formulées par les CDC d'Atlanta³ et reprises par le Centre Fédéral Canadien pour le SIDA^{4&5}. Il faut par ailleurs aussi rappeler la survie possiblement prolongée du VIH dans

l'environnement. Deux études indépendantes ont en effet démontré qu'expérimentalement du moins, le virus VIH pouvait survivre sous forme desséchée ou soluble pendant des périodes allant respectivement jusqu'à 3 et 15 jours^{6&7}. Ces résultats ont été obtenus avec des inoculants extrêmement concentrés et par conséquent doivent être interprétés avec circonspection. Ils sont néanmoins très troublants et n'incitent sûrement pas à un relâchement des mesures préventives. De plus, l'idée d'être exposé à des organismes encore plus pathogènes que le VIH tel le virus de l'hépatite B, le virus de l'hépatite non-A non-B et le *Mycobacterium tuberculosis* devrait nous inciter à la plus grande prudence. Écarter ainsi certains principes fondamentaux d'asepsie sur la foi de données statistiques, pour une maladie du reste mortelle, m'apparaît hasardeux.

Je partage toutefois entièrement l'opinion de l'auteur sur le risque minimal encouru par les dentistes lors de traitements de patients sidatiques ou séropositifs. Je voulais simplement attirer l'attention sur le respect que l'on doit accorder à cette maladie sur le plan aseptique et sur le fait que, par la prise de précautions appropriées, le dentiste peut exercer sa profession dans des conditions qui ne lui portent aucun préjudice. Δ

Rénald Pérusse, DMD, MD
Section de médecine buccale,
École de médecine dentaire
Université Laval
Ste-Foy, Québec

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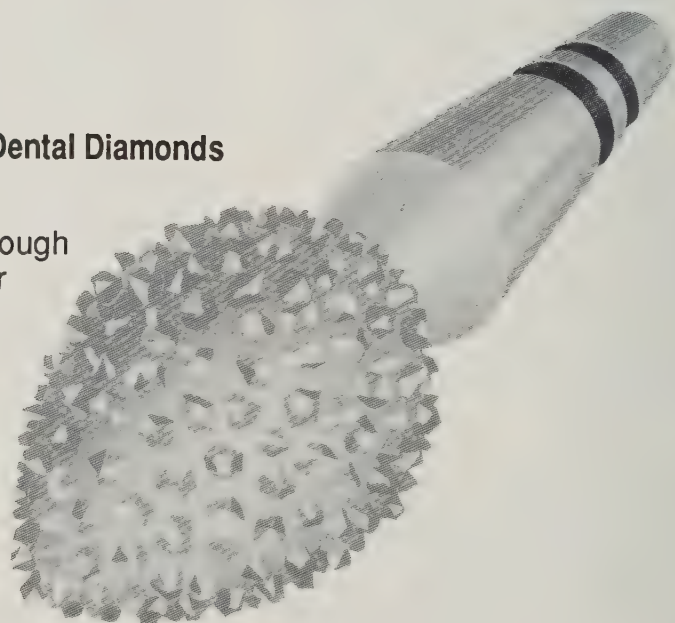
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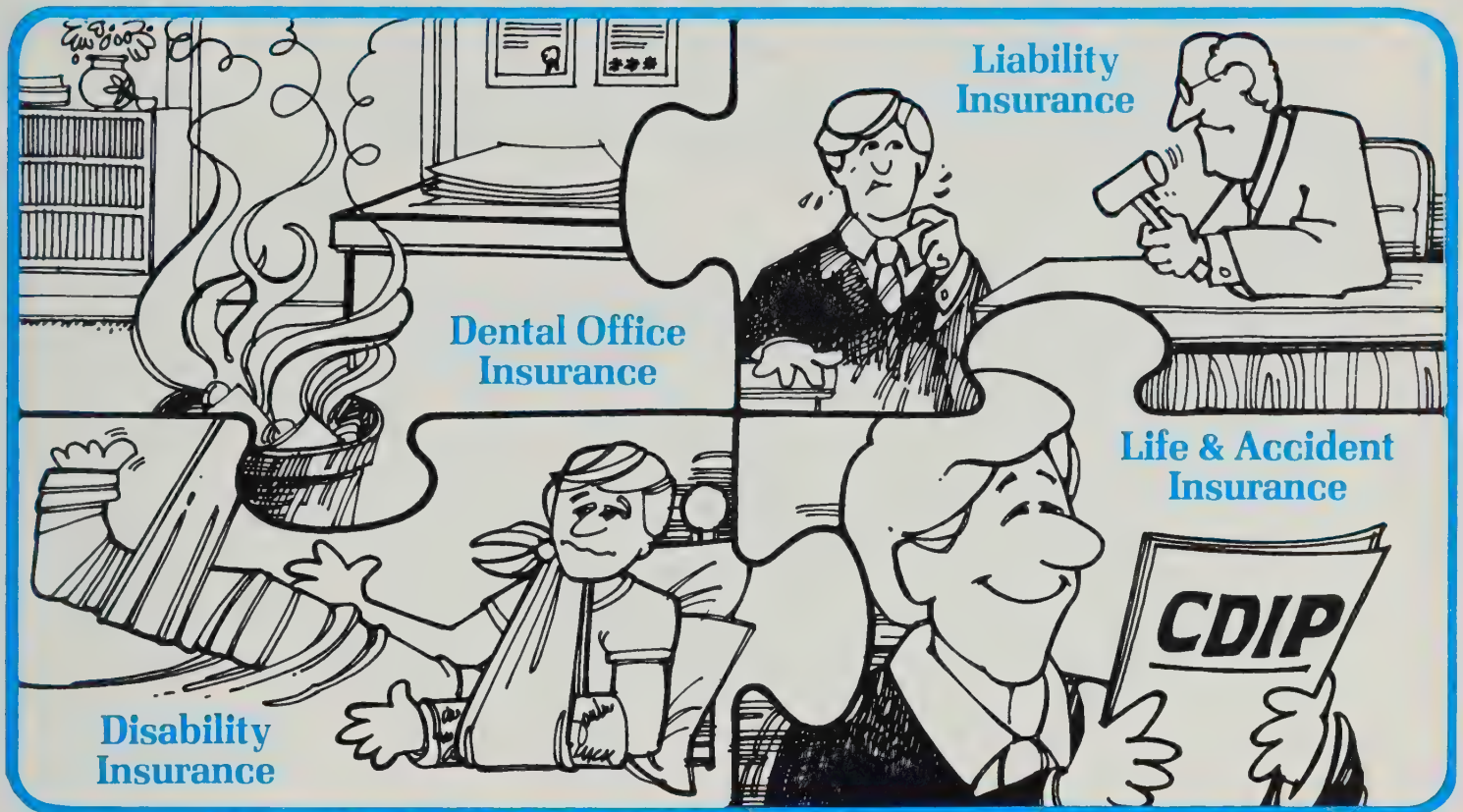
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Kevin L. Roach, BA, DDS

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Supporter of CDSPI

(CDA President-Elect Kevin Roach of Pembroke, Ontario, is an enthusiastic supporter of CDSPI's dental office insurance coverage.)

Dr. Roach had the misfortune to experience major fire damage in his dental office in Pembroke, just over a year ago.

Fire gutted a basement apartment directly below his dental office early on a Saturday morning. His dental office suffered severe smoke damage.

Dr. Roach assessed the damage later that day and on the following day (Sunday) phoned Dr. Mel Charendoff, Secretary of the CDSPI Management Committee, outlining the circumstances and seeking procedural advice. Dr. Charendoff promised to provide the answers as promptly as possible. He astounded Dr. Roach by calling back within an hour, offering the name of an Ottawa insurance adjuster who would handle the claim. The adjuster was contacted early the following day. Just after lunch the same day (Monday) the adjuster was in Dr. Roach's Pembroke office assessing the damage.

Within a day or so, the adjuster contacted Medi — Dent Service because Dr. Roach has a substantial number of equipment leases from that company. The total damage covered by Medi — Dent Service was approximately \$10,500. Guardian Insurance, the underwriter for the CDSPI's office contents policy,



Kevin L. Roach, BA, DDS

covered about \$65,000 of the total damage.

The experience, Dr. Roach said, "made me aware of new aspects of insurance coverage, even though I have been dealing with these groups since I graduated in dentistry. I had examined the Medi — Dent group coverage and discovered that there is a \$500 deductible per claim per dentist. I spoke to an official of that group who explained that the deductible was to avoid nuisance claims. I suggested that for larger claims such as mine, this deductible should be dropped, and he agreed." The \$500 deductible has been eliminated.

Dr. Roach was aware that CDSPI has a deductible of \$250 or \$500 under their office contents insurance, but when a major claim "such as mine, is involved, that deductible is dropped." It is an advantage then, he found, for the dentist to take the highest deductible possible.

"If it's minimal, you don't bother CDSPI. But if you have occasion to seek a large claim, the deductible isn't applicable anyway."

He said he was shocked to discover, "when I submitted accounts to Guardian Insurance for my employees' personal belongings, such as nursing shoes, umbrellas, sweaters, etc., that such items were not covered in their policy. I informed the CDSPI of this and, according to Kingsley Butler, the Executive Vice President of CDSPI, they now have coverage for employees' personal effects to a limit of \$500 per employee — which I think is excellent. I feel certain that a great many dentists across Canada had no knowledge of this gap in coverage, and perhaps CDSPI people themselves were unaware of it, until I filed this claim.

"I learned two valuable lessons from this experience. One was that I was under-insured. I was carrying \$100,000 for office contents. With three operatories in my office, I now calculate I should have \$50,000 in coverage for each operatory and an extra \$50,000 for supplies alone. And I should be carrying \$200,000 in coverage for contents in an office such as mine with the three operatories, a dark-room, supply room and lab. This is the amount of coverage necessary in a typical one man/one hygienist dental office.

"The second lesson was that when choosing insurance coverage, you should make provision for lost office time while your building is being repaired. It is physically impossible to conduct a temporary practice elsewhere. Also, I did not carry loss of income coverage with CDSPI, although I was covered by my office policy.

"I was very impressed with the great service I received from CDSPI and the quick action taken by their adjuster." △

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Further particulars and application forms may be obtained from the Appointments Officer, Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, UK, or from the Secretary, Faculty of Dentistry, University of Hong Kong, The Prince Philip Dental Hospital, 34 Hospital Road, Hong Kong. The closing date for applications is 17 March 1989.

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Return application with covering letter no later than 4:45 p.m. March 10, 1989, quoting file CI-2164, to: Mr. E.J. Anthony, Regional Personnel Administrator(C), Ministry of Correctional Services, 6711 Mississauga Road, Suite 406, Mississauga, Ontario, L5N 2W3.

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MALPRACTICE INSURANCE:

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*Peter N.C. McLuskey,
Manager, Special Accounts Branch,
Guardian Insurance Company of Canada*

Malpractice is an immensely complicated subject. The new Merriam-Webster pocket dictionary defines malpractice as "a dereliction from professional duty or a failure of professional skill that results in injury, loss, or damage." Using this as a base you would find it difficult to believe that a light bulb falling out of a socket would produce an action for malpractice. It did, and the ground for the action was the fact that the patient was in a dental chair awaiting treatment when the incident happened. The light bulb example is unusual. Most claims result from an alleged injury, loss or damage. Before proceeding to discuss claims in more detail, some background on what insurance is available is required.

In Canada there are two major plans. One is for dentists practicing in Ontario only, the other is for dentists practicing in any other part of Canada. Both are underwritten by the Guardian Insurance Company of Canada.

The plans have some differences and some similarities. Both have an individual per insured deductible. This means that the individual dentist may be asked to pay part of the loss out of her or his own pocket. Under the Ontario plan, however, there is a group deductible of \$35,000, with an annual aggregate limit of \$1,500,000. What the group deductible means is that the group pays the first \$35,000, on each and every loss. These payments are cumulated to a maximum of \$1,500,000 in any one year. If the claim payment exceeds \$35,000 then Guardian will pay the difference up to the insured limit. In handling claims, expenses are incurred. They take two basic forms: expenses incurred by claims adjusters, and expenses incurred in lawyers' fees. Under the plan described above the insurer has no responsibility for claims adjusters' expenses. This means, therefore, that the group must

fund up to \$35,000 for each and every loss, plus adjusting expenses.

Under the other plan Guardian pays everything up to the limit of the insurance, subject to the application of the individual insured deductible, if payment to the claimant is made.

From an insurer's perspective, there is very little difference between the plans. Both are administered on the same basis, i.e. Guardian reviews every claim and reads every piece of paper on each claim. In addition, the rating concepts used by Guardian are identical. The only difference is the application of a credit for the \$35,000 group deductible and a charge for the losses in excess of the \$1,500,000, in any one year.

Reserves established

Under both plans Guardian establishes reserves on each file. You might wonder why a reserve is established under the Ontario plan with its \$35,000 deductible, if the amount claimed, is say \$10,000.

The reason for the reserve is that the insurer will be called upon to pay the entire cost of the claims once the \$1,500,000 annual total has been paid. Historically, this has been a frequent occurrence.

Guardian has insured one plan since 1978 and the other since 1985. If you look at the results for 1985, 1986 and 1987 some information, which is common to both plans can be reviewed. The first item is the frequency of loss. In order to have a uniform base we have looked at the number of claims reported for each 100 dentists insured and this has been done on a provincial basis. Both plans have similar reporting procedures. The rankings for frequency of claims are as follows:

1 = Highest number of claims.
10 = Lowest number of claims.

Province	1985	1986	1987
Newfoundland	9	6	9
Nova Scotia	4	8	8
Prince Edward Island	9	10	10
New Brunswick	8	9	4
Quebec	3	4	2
Ontario	2	2	1
Manitoba	7	7	6
Saskatchewan	5	3	7
Alberta	6	5	5
British Columbia	1	1	3

On an All-Canada basis, the primary cause of loss is as follows:

	1985	1986	1987
1) Unsatisfactory Fixed Bridges	Unsatisfactory Fixed Bridges	Unsatisfactory Fixed Bridges	Unsatisfactory Fixed Bridges
2) Parasthesia	Parasthesia	Parasthesia	Parasthesia
3) Failure to Treat	Unsatisfactory Endodontics	Unsatisfactory Orthodontics	Unsatisfactory Orthodontics
4) Unsatisfactory Endodontics	Unsatisfactory Orthodontics	Unsatisfactory Endodontics	Unsatisfactory Endodontics
5) Unsatisfactory Oral Surgery	Unsatisfactory Oral Surgery	Unsatisfactory Oral Surgery	Unsatisfactory Oral Surgery

The percentage of fixed bridge claims ranges from about 12-20 per cent in any one year. These claims are usually difficult to settle because they often involve a breakdown of the patient/dentist relationship.

New jurisprudence created

Parasthesia claims represent about 10 per cent of all claims. They are relatively easy

to defend since Guardian created new jurisprudence. Many potential claims are stopped by merely forwarding to the plaintiffs the decision in *Schintz vs Dickenson* and *Diack vs Bardsley*. Both plaintiffs suffered parasthesia following a dental procedure. Prior to these two decisions, parasthesia was a major source of paid losses. These two decisions can therefore be described as important factors in moderating malpractice premium increases.

Largest claim \$7 million

The largest amount claimed against a dentist, in Canada, was for more than \$7,000,000. This case involved Ludwig's Angina Syndrome. The plaintiff is a young girl and she is severely injured. Her injuries truly have a value in the millions of dollars. Because there are various other parties involved in the lawsuit and discoveries are continuing, no further information can be divulged.

The largest single reserve carried by Guardian is for \$1,100,000. (This is the amount of money that Guardian has set aside for payment in the event that the claim is settled.) The claim involves a LeFort procedure performed in 1981.

There have been several instances of a frequency of loss from the actions of one dentist. The worst case involves more than 50 claims.

To date the actual paid claims and the outstanding reserves for this one dentist total more than \$450,000. The individual concerned no longer practices in Canada. There is one other situation which has the potential to exceed this case. Containment procedures appear to be working. These are procedures designed to limit the number of claimants and the quantum involved in claims presented. At the moment we do not expect it to be a major problem to Guardian.

A question we are asked frequently is, "Why are my premiums constantly rising?" A number of factors influence the premium and they apply to both plans.

When a claim arises from a dental procedure it is usually necessary for remedial dentistry to be performed to take care of the claim. The cost of this work is usually whatever the Provincial Fee Schedule is at that time. Thus if the faulty work was done in 1985 and the remedial work done in 1988 then the 1988 costs will apply. If the original work is done by a general practitioner and the remedial work by a specialist, then the cost will be even greater. If we were to get remedial dentistry performed on a non-profit basis then the cost of claims would trend downwards.



Premium levels have been reduced as a result of the investment income derived from the money retained for payment of claims, taken into consideration in the rate making exercise. We call this a "cash flow discount". As interest rates have declined we have reduced the cash flow discount which we apply to the premium charged.

Insurance company costs rise

Insurance company expenses for salaries, rents, printing expenses and the like, continue to rise. Heavy computerization in the last ten years has moderated this growth.

The two insurance brokers involved in the insurance programs are remunerated on a fixed fee basis for services rendered. Normally an insurer remunerates a broker with a fixed percentage of the premium. For malpractice insurance and errors and omissions, this figure approximates 15 per cent per policy. It is our understanding that the fee paid to the brokers involved is considerably less than this 15 per cent.

Guardian has reviewed the paid claims for 1985, 1986 and 1987 and found that in two of these years the CDA plan has lower average costs per claim. There is very little difference in the length of time it took to settle the claims. The number of settled Ontario claims on a percentage basis is slightly lower than that for the rest of Canada.

No significant comparison has been made on the run-off of the old claims under both plans. This involves a comparison between the sum of money set aside for claim payment and the actual amounts paid out. Run-off is very important because it takes a long time to close out any one policy year. Malpractice claims incurred in all years from 1979 on are still open and still being handled.

When these claims are settled you have a positive run-off if your reserve is equal to or greater than the cost of the settlement. You have a negative run-off if the cost of settlement is greater than your outstanding reserve.

Monitoring run-off is a complex exercise. Guardian monitors this for all its products, as a negative run-off can be a trip to insolvency. If claims are properly handled, full cash reserves should be established in the year of occurrence. This is difficult to do. Insurers try to achieve stability by using bulk reserving for incurred, but not reported claims and loss development.

Loss development

With malpractice claims, loss development is the significant factor. An illustration of loss development would be a claim which when originally reported was assigned a value of \$5,000. After investigation it was decided that the claim had a value of \$15,000. At examinations for discovery new evidence was produced which caused the claim to be revalued again at \$30,000.

Therefore the loss can develop from \$5,000 to \$30,000. Our figures show that it takes 36-48 months from the end of any claims year, before dental malpractice claims reserves peak. Insurers refer to this as the long tail effect.

Another technique used by insurers to stabilize results is the use of reinsurance. This is a procedure whereby an insurer pays a premium to another insurer. In return for this premium the other insurer assumes a portion of the loss.

A significant question that we have not answered thus far is — ***why do all insurers not offer malpractice insurance?*** The answer is the same as a dentist would give when you ask — why don't all dentists offer to do the LeFort procedure? Most don't know how to handle it.

Few specialists in Canada

More than 200 insurers operate in Canada. When it comes to malpractice insurance and errors and omissions there are only about 100 people with the ability to operate in these insurance specialty areas. If you spread these 100 people over all the insurers, the problem becomes acute. As a result of this shortage of talent most insurers are specifically prohibited by their reinsurers from underwriting professional liability insurance.

The next obvious question is — why don't insurers train more people to underwrite the professions? Here the answer is more complex.

Canada has a small population. All professions, numerically speaking, are small. Statistically, as a percentage of the population, their number is insignificant.

The total of all the premiums paid by dentists to general insurers i.e. those

who insure their offices against fire, theft, third party liability and malpractice is probably about \$10,000,000. The total premium base for general insurers in Canada is around \$9,000,000,000. Automobile insurance with an income of just over \$4,000,000,000 is the major source of premium income followed by property insurance with a premium income of approximately \$3,000,000,000. ***The entire professional liability market in Canada is probably less than \$300,000,000.*** (the exact figure is not known). Companies, therefore, direct their resources to where they see the largest revenues. Another factor in few companies being interested in Professional Liability is the cost of training personnel to operate in this field.

Insurers like large numbers because the larger the number the smaller is the error factor. To price a product

accurately an insurer needs a base of at least 10,000 paid claims. All of the open and paid dental malpractice claims since 1978 number less than 5,000. The error margin in pricing this product is therefore very high. Considering the two programs as presently constituted it could be as high as 25 per cent. If the programs were further fragmented, this error factor could increase and probably exceed 50 per cent.

Strong competitive pressure

What does the future hold now that the insurance market is softening? By softening we mean that rates are declining as a result of competitive pressures. At this time we cannot offer a good answer. We were, however, very struck by this quote from the Chief Executive Officer of the Fireman's Fund in the United States, as reported in Business Insurance. He drew

a military analogy to explain his ideas of how insurers should respond:

"My heroes for the insurance business are Marshal Foch and Marshall Kutuzov" he said. Both Ferdinand Foch, Commander of the French Army in World War I and Mikhail Kutuzov, Commander of a Russian Force during Napoleon's 1812 assault on Moscow, practised forms of strategic retreat. Both commanders drew their enemies further and further into the interior, stretching supply and intelligence to the breaking point before pouncing. Mr. McCormick sees great wisdom in this defence strategy for American insurers caught in a softening market.

"The name of the game is to survive and hang on". This is not a Patton type industry," he said. It should be noted that Mr. McCormick joined Fireman's Fund three years ago when it was mired in financial trouble. Δ

CANADIAN DENTAL SERVICE PLANS INC. (CDSPI) INVITES APPLICATIONS FOR A POSITION ON ITS MANAGEMENT COMMITTEE

Qualifications

- Must be a member of the CDA and a dentist licensed in at least one Canadian province.
- Must have appropriate experience as a specialist and/or general practitioner.
- Must have demonstrated the ability and willingness to work within organized dentistry. Past service with the CDA or one of the provincial dental organization in an elected/appointed capacity would be an asset.
- Should currently be a participant in one or more of CDSPI's programs.
- Must be willing to make a long term commitment of no less than seven years of continuous service.
- Must have the willingness and ability to participate in decision making and management by consensus and have good communication skills.
- Must be willing to arrange personal and professional schedules so as to be available for all Management Committee functions. Management Committee normally meets at CDSPI headquarters in Toronto.

Duties:

Reporting to the Board of Directors, this individual will work as a part of the Management Committee being responsible for the management of the corporation as set out in a detailed job description.

Starting Date:

To commence a one-year apprenticeship period January 1, 1990; beginning regular term on January 1, 1991. Selection of a successful candidate is to take place at the August 1989 meeting of the CDSPI Board of Directors.

Please submit applications by May 15, 1989, in writing only along with a detailed resumé, to:

The Management Committee Selection Committee
c/o CDSPI
2 Lansing Square, Suite 600
Willowdale, Ontario
M2J 4Z3

All responses will be treated as confidential.

LE CDSPI EST À LA RECHERCHE DE CANDIDATS DÉSIREUX DE FAIRE PARTIE DE SON COMITÉ DE GESTION

Exigences

- Membre de l'ADC et dentiste autorisé à exercer dans au moins une province.
- Expérience pertinente comme spécialiste et/ou généraliste.
- Capacité et volonté prouvées de travailler au sein d'un organisme de la profession. Une expérience concrète au sein de l'ADC ou d'une association provinciale — par élection ou nomination — serait un atout.
- Obligation de participation effective à au moins un des programmes du CDSPI.
- Désir de s'engager à long terme pour une période ininterrompue d'au moins sept ans.
- Désir et capacité de participer au processus décisionnel et à une gestion collective, et bon sens de la communication.
- Vie personnelle et professionnelle organisée pour permettre la disponibilité pour toutes les fonctions du Comité de gestion. Ce dernier se réunit normalement au siège social du CDSPI à Toronto.

Fonctions

Le candidat retenu relève du conseil d'administration et travaille au sein du Comité de gestion. Il ou elle sera chargé de la gestion de l'organisme conformément à une description de poste détaillée.

Entrée en fonctions

Le candidat aura un an pour se familiariser avec ses fonctions, à compter du 1^{er} janvier 1990. Entrée en fonctions normale le 1^{er} janvier 1991. La sélection sera faite à la réunion du conseil d'administration du CDSPI d'août 1989.

Veuillez faire parvenir votre candidature par écrit au plus tard le 15 mai 1989, accompagnée d'un curriculum vitae détaillé, à l'adresse suivante:

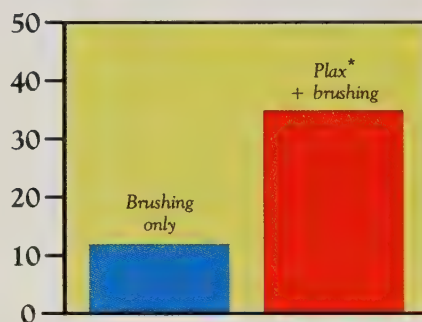
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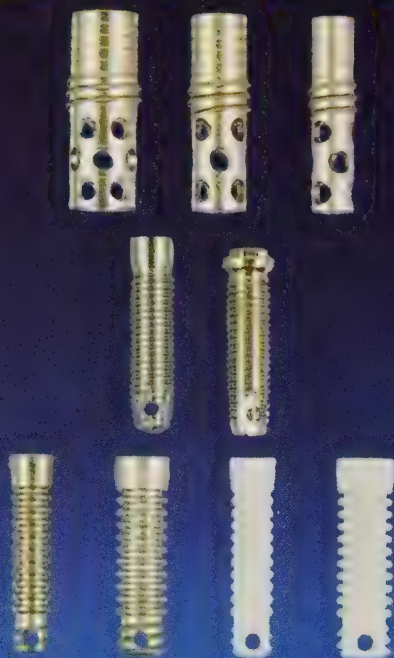
For best results, patients should rinse with 1 tablespoon (15 mL) of Plax* for 30 seconds *before* brushing with their regular dentifrice.

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INDEPENDENT CLINICAL REPORT CITES CORE-VENT ADVANTAGES



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"Clinical Success"

Clinical Research Associates of Provo, Utah, reported on the Core-Vent System of Osseointegrated Implants in its March, 1988, newsletter. The section entitled "Advantages" is quoted verbatim below:

- A. Complete system.** Other products available address specific aspects of implant procedures, but none offer broad range of Core-Vent System.
- B. Moderate cost.** Considerably less than Branemark, and less than most other systems also.
- C. Company responds rapidly to dental clinical needs.** New designs and changes in old designs have been developed as practitioners expressed need.
- D. Surgical procedures are made simple.** Many sizes and types of implants offer range of alternatives and accommodate most clinical needs. Clinical success of system throughout profession demonstrates concept is relatively easy to understand and use.
- E. Adapts well to both fixed and removable prosthodontic needs.** Bendable and castable abutments allow angulation of coronal positions and choice of 12 threaded and 10 cemented abutment options for Core-Vent, Screw-Vent and Micro-Vent. Numerous designs allow versatility necessary to adapt implant to individual patient needs.

F. Broad education resources offered, but not requisite for purchase. Include videos for clinician and patient, hands-on and lecture courses, annual symposium and manuals.

G. Primate studies show Core-Vent comparable to well established Branemark System. (J Dent Res vol 67, March '88-[1] Boyne, et al, Abs. #557, p. 182; and [2] Beirne, et al, Abs #558, p. 182.)

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“D·I·D” DIALOGUE IN DENTISTRY

What's it all about?

P. Ralph Crawford, DMD

In the world of changing dentistry where such numerous new terms as alternative dental systems, capitation, PPOs, Direct Reimbursement, etc., have crept into the dental language, the phrase “Dialogue in Dentistry” (DID) is becoming more and more common. Recently in Edmonton an opportunity arose for a group of dentists to become better informed on an entire process that eventually will influence every dentist in Canada.

The Alberta Dental Association sponsored a 12-hour Dialogue in Dentistry Workshop for 30 invited Alberta dentists and two representatives each from Saskatchewan and Manitoba.

The intensive session was led by two dentists from the College of Dental Surgeons of British Columbia, both general practitioners; Dr. Larry Rosoff, Chairman of the College of Dental Surgeons of British Columbia's Alternative Delivery Systems Committee and Dr. Don MacFarlane, Chairman of the Canadian Dental Association's Third Party Dental Plans Committee, who is also from B.C. The two leaders have had considerable experience establishing a DID communication network in their home province, and were involved in training the B.C. contact dentists.

Dr. Rosoff introduced his listeners to the history of DID which had its begin-

nings in the Chicago area in 1983. At that time, the dentists in Lake County recognized a need to communicate with business and industry to assist in designing the best dental plans for specific situations. By September 1984, the Chicago Dental Society successfully launched and established a DID program that has brought remarkable results. Mr. Del Stauffer, Executive Director of the Chicago Dental Society, stated, “Our concern is that decisions are made on the right basis, with intelligent information and to that extent DID is well worth whatever we put into it.”

In 1986, the CDA Third Party Dental Plans Committee became aware of the success of DID and sought an opportunity to involve dentists from Canada.

In June of 1987 the Chicago Dental Society invited the Canadian Dental Association to participate in a DID Contact Dentist Training Program. Twenty Canadians, representatives from coast to coast, journeyed to Chicago for their introduction.

In his opening remarks in Edmonton, Dr. Rosoff told the dentists that they are the experts; what they do best is dentistry, and when it comes to insurance, there aren't too many who know more about it than they do. Every day dentists see a variety of plans and are aware first-hand of the plans' impact on patients.

Dentists are quite capable of sitting at a table with any Chief Executive Officer of any company, or with any benefits' consultant or insurance agent and talking not just as an equal, but as an expert. Within the whole process the dentist will be respected by industry both for his expertise and for taking the time out of a busy practice to talk about dental insurance.

Benefits derived from more than fifteen years of third party insurance have been responsible for an unprecedented growth in dental treatment utilization, plus a phenomenal increase in the nation's dental health status — much to the credit of dentistry itself. Lately, however, as premiums have risen and welfare funds and insurance reserves have dried up, the actual or perceived cost of dental insurance has caught the attention of insurers and purchasing groups. Cost containment has become a buzz word.

The speculations of industry, employers, and unions have often attempted to attribute the cause of increased dental plan premiums to the dentists. All too often the dentist is named the villain! Four comments are frequently heard . . .

1. Fee increases are too high and too frequent. “Dentists make too much money and are not subject to negotiated control.”

FIGURE 1

Owners and carriers of Canada's capitation plans

Capitation began in Canada about 1979 in Ontario in a very small way. Only a few dentists and small groups of blue collar employees were involved.

In 1986 most of the large insurers got involved — in most cases as a defensive move to protect their market share. Now, the following are involved:

Name	Owner	Associated Carriers
Advantage Dental	Prudential Insurers	Prudential Standard Life Constellation Ass. Co. North American Life Assurance
Dental Maintenance Organization (DMO)	Trident Health Care Inc. Aetna Canada Sun Life Ass. Co. of Canada	Aetna Canada Sun Life Ass.
Future Focus Health Systems Ltd.	Metropolitan Life Insurance Co.	Metropolitan Life Crown Life Cigna Ins. Co.
Managed Dental Care (MDC) of Canada	Blue Cross Ontario	Blue Cross
Neighbourhood Dental Services (NDS)	London Life Ins. NDS Management	London Life
Pace Benefits Ltd.	Great West Life Confederation Life Mutual Life Canada Life	Great West Life Confederation Life Mutual Life Canada Life

This implies that unions must sit at a negotiating table and "hammer out" agreements for wage increases, whereas dentists can raise their fees anytime they want. The fact that in the main in Canada dental fees have not risen any higher than the CPI, nor are dentists' relative incomes any greater than comparable groups in society is far too often overlooked. Most provincial fee guides in recent years have undergone major adjustments to the frequently used "front-end" dental services with considerable economic advantages to both patient and insurers. The profession is working hard to modify fee guides in a responsible manner.

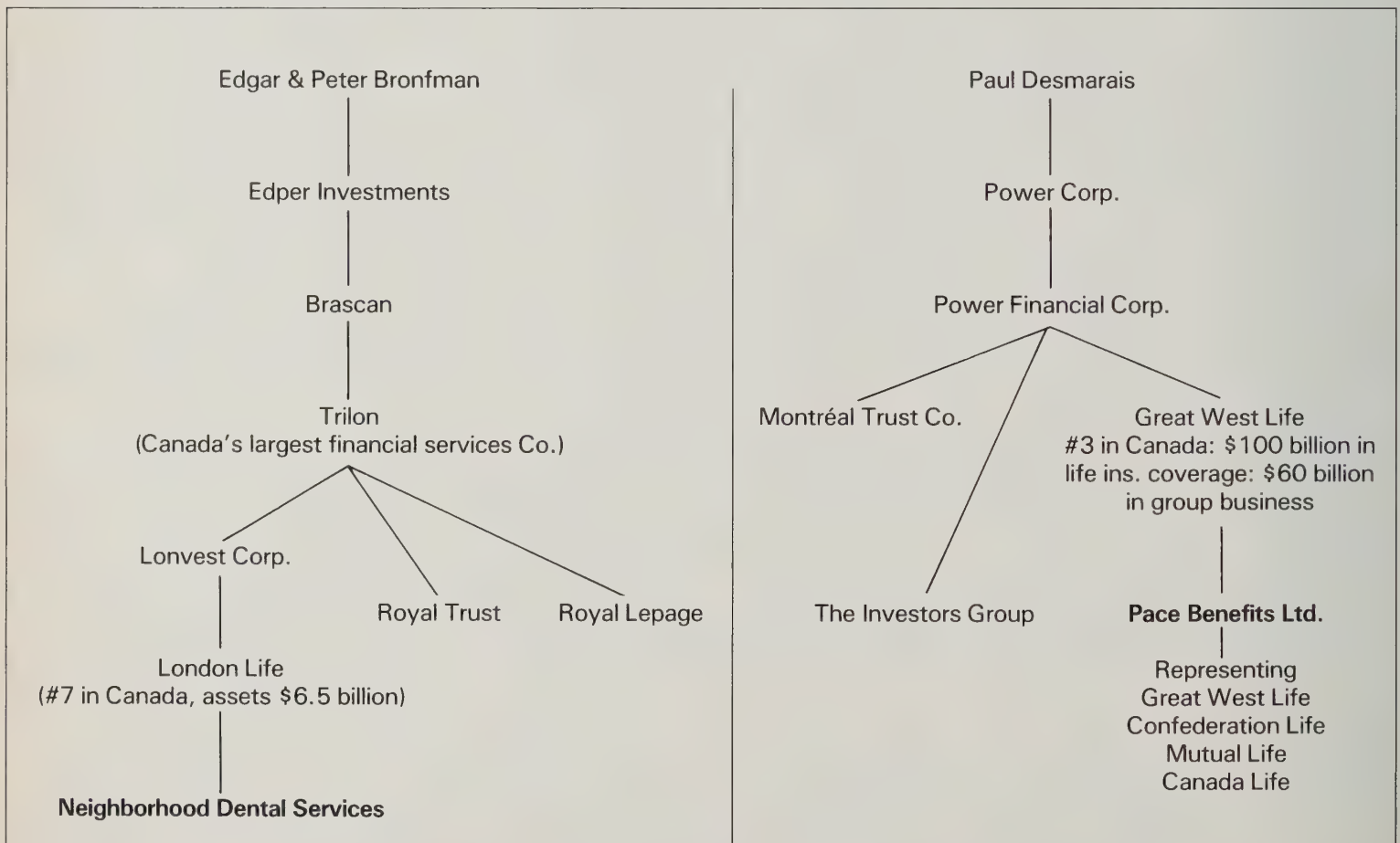
2. Over-servicing of patients. "Dentists perform too many unnecessary services."

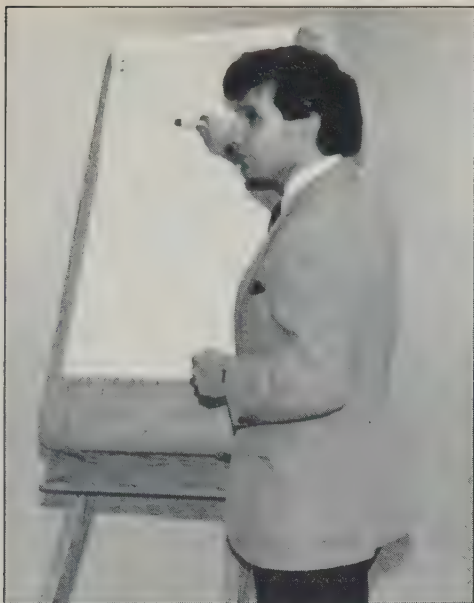
3. Fraudulent billing. "Dentists bill for services not performed."

Both these items are matters of ethical and legal concern. The swift response of Dental Licensing Authorities to protect the public interest, as a statutory responsibility, have been dealt with time and again by way of internal regulation; the mediation and peer review mechanisms.

FIGURE 2

Two empires with controlling interests in two major capitation companies: Pace Benefits and Neighborhood Dental Services





Dr. Larry Rosoff, Chairman of the College of Dental Surgeons of British Columbia's Alternate Delivery Systems Committee.



Alberta, Saskatchewan and Manitoba participants at the Dialogue in Dentistry workshop, in Edmonton.

Dentistry has never denied that these problems exist and are thankful that the numbers are small. Some provinces are better than others at the review and discipline process that protects the public. These other provinces have been challenged to improve the process and handle complaints in a more timely fashion. They should not only be actively involved but seen to be involved.

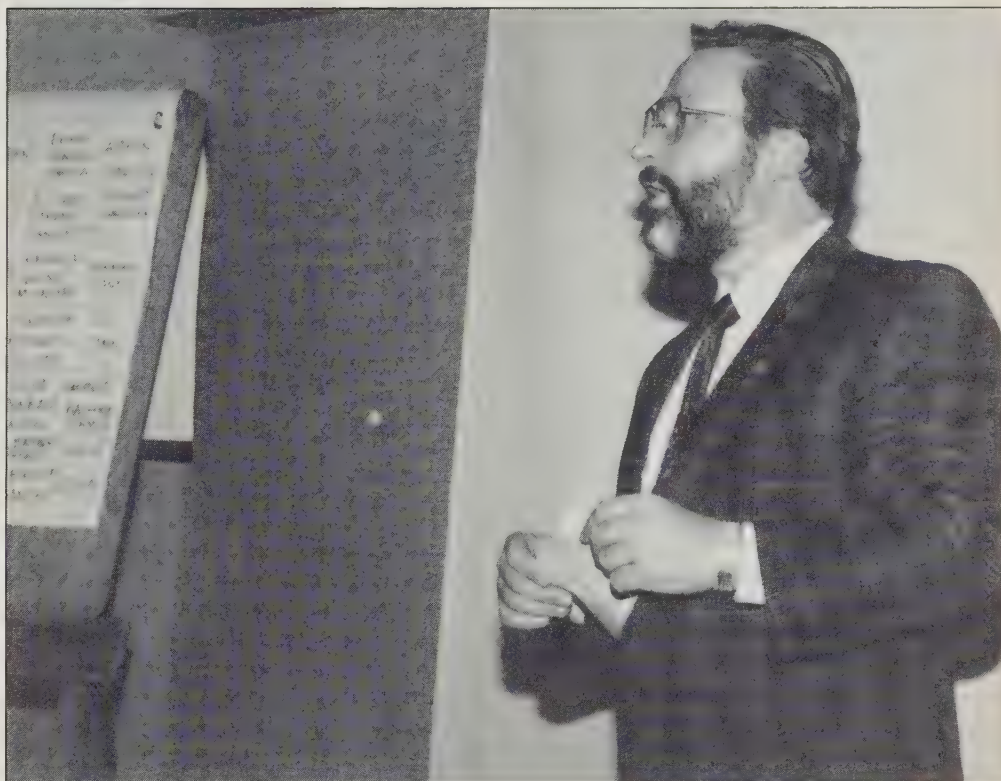
4. Over-utilization of covered benefits. "Dentists are performing more services per patient per appointment than previous profiles indicate."

The term 'over-utilization' of benefits was coined by the insurance industry pronouncing the dental profession guilty of deliberately 'mining' the oral cavity. **What is really being discussed here is that more and more people are availing themselves of dental services than ever before.** It's a simple matter of Canadians not only having the funds to pay for dental treatment, but also the initiative and the awareness to seek it out.

It would appear that Dental Awareness has become a fact of life; dentists are just doing what they are trained to do: enhancing the quality of life for more and more patients.

Dialogue in Dentistry is specifically designed to get out into the marketplace and dispel those prevailing myths. To explain what is truly happening and why. DID is a means of clarifying dentistry's perspective. It is dentistry's outreach into the community to set the record straight.

The profession is not blind. **It is aware that insurance carriers and employers**



Dr. Don MacFarlane, Chairman of CDA's Third Party Committee, speaking at the DID workshop.

do not have bottomless pits of funds.

There has been and is an overall cost escalation of dental insurance benefits (as much as 12 per cent to 14 per cent per year) and by necessity, cost-containment must be initiated. At the same time however, the Profession is not willing to take the blame when the majority of the increases are due to more people getting higher quality care from more dentists.

The overall goal of the DID program is to improve the public's ability to assess the dental plan alternatives available in the marketplace and by educating more people about the advantages and disadvantages of each alternative. It is also to allow the public to make an informed choice of a plan design at a cost they can afford. This can be accomplished by discussing the issues with benefit consul-

tants, insurance brokers, employees and employee groups. It is important to share with them dentistry's perspective on dental plans and help groups to retain dental plans as a benefit.

DID is not a program to take over the job of the consulting community. The contact dentist will not recommend a plan design, but will provide the information which the employee or the employee group can use with their consultant to make an informed decision.

Dialogue in Dentistry is not an anti-Capitation campaign, nor should it be perceived in that fashion by dentists and industry. Dialogue in Dentistry is communication! Certainly, once the disadvantages of capitation are compared with other plan choices, it will be apparent it is poor value for the dental plan benefit dollar and is ultimately not beneficial to the patients we serve.

How can any plan, such as capitation, which intrinsically has the potential to interfere with two of the patient's basic rights — freedom of choice and quality care — be accepted as an answer to cost-containment?

In his Edmonton remarks Dr. Don MacFarlane asked the question, "Why is dentistry reacting so strongly to the alternatives posed by the insurance industry? In Canada there is really only a small number of the dentists in capitation at the moment — less than 200 dentists — why then react?"

Answering his own question, MacFarlane said, "It is not simply a matter of capitation or some other alternative. What we are looking at is the big corporation 'M' (for money!). The Insurance Industry has targeted dentistry as another growth area in their immense array of services. When it comes to throwing money at a problem we just don't stand a chance against them."

Dr. MacFarlane used a graph to illustrate how two of the country's leading, largest and most successful insurance companies can ultimately and intimately be traced back to two main financial power bases — the Power Corp and Bronfman Empires. Not fanciful conjecture but business realities: Dr. MacFarlane referred his audience to James Fleming's 1987 Penguin publication, "Merchants of Fear". (See graphic)

MacFarlane said, "Don't despair!" The Profession has two "aces" business does not have. First of all, we have a relationship with our patients and the integrity we've built up over years of providing high quality dental care. Second, we have the dentists. We've got the manpower. If we can only accomplish one major thing,

it is to provide enough education to dentists to make them realize that alternatives such as capitation are certainly not in the best interests of our patients. Then, no matter what the inducements may be, we'll win — because "No-Dentists, No-Capitation" really works.

Evidence shows that programs such as Dialogue in Dentistry and "No-Dentists, No Capitation" are working. In British Columbia and Ontario where Capitation really started, the Capitation promoters have not really been that successful in signing up dentists.

In Ontario, where there are more than 5000 dentists, the number of dentists involved in Capitation has actually decreased. A year ago Future Focus (Metropolitan Life) had 30 or 40 dentists enrolled. This year there are less than ten. One year ago it was estimated that probably 125 dentists operated on a Capitation basis; today the numbers have shrunk by more than a half — to about 50. ***The primary significance of these declining enrollment numbers is that Capitation is not the answer to industry's dilemma of cost-containment*** but it is also significant that the Profession has been able to discuss the causes and educate business, industry, unions, patients and dentists themselves that we are really striving for the same thing, quality treatment at a reasonable fee.

How then does Dialogue in Dentistry Work? Drs. Rosoff and MacFarlane informed the audience that they were going to be the "first line of action"; they were being designated DID Contact Dentists, the most important link in the chain of communication. When a dentist anywhere becomes aware of any situation involving dental plans that could pose a concern or problem, the Dental Association or Society should be immediately notified. The Association by necessity will coordinate the entire process. The DID Contact Dentist will be asked to meet whomever is involved with the dental plan in question; it may be the employer, the benefit's consultant, the union etc. Above all, ***it is important to note that all the DID services are FREE. The Association, the Society, Contact Dentist*** do not charge any of the groups they contact and meetings will be mutually convened.

At the initial meeting the dental plan is discussed and problems and concerns are brought into the open (usually cost-containment). The DID Contact Dentist then offers his/her services and those of the Association to find the best solution for all involved. The DID contact dentist then requests statistical information rele-

vant to a benefit's program, with the assurance of confidentiality. Only by being aware of all the employment ramifications can a proper dental plan be tailored to any organization.

Dialogue in Dentistry may advise an employer of any number of variations available. The plan design, including deductibles, copayments, financial limits, exclusions and alternative benefit clauses, are reviewed. The different type of risk-sharing — i.e. indemnity plans, administrative services only, and self-insured plans like Direct Reimbursement — are explained. All of the factors involved need to be openly discussed with candor, to generate the trust that is critical to DID's success.

Rosoff and MacFarlane cautioned that DID is not taking the role away from dental benefit consultants nor infringing upon their territory. DID only wants to complement the process in an unbiased fashion. DID strives to remain impartial. Contact dentists do not act as consultants. They offer information that assists in analyzing a plan and advise employers to go to their own consultant with the newly acquired information.

As part of the Edmonton experience, the group of over 30 participants split into five "Mock Sessions" that dealt with possible variations which could arise within any dental community. Scenarios ranging from small companies of ten employees who never had a dental benefit plan, to large industrial plants with thousands of insured employees with a company president who was adamant that cost-containment be implemented NOW, were acted out. The workshop participants actively changed roles until they felt comfortable in a plurality of situations.

The Dialogue in Dentistry Program has been proved to be an important service to the Profession. Despite being on the scene only a few short years, valuable benefits have resulted; the "winner" in the process is exactly who it should be — the patient — who benefits with quality care within a manageable fee structure.

For those interested, a national Dialogue in Dentistry head office has been funded by the CDA and will open early this year, in Ottawa. Further resources and information are readily available from the Third Party Dental Plans Committee of the Canadian Dental Association in Ottawa, or from your provincial association. Δ

(Note: the Journal is grateful to the Alberta Dental Association and its Associate Director, Dr. Brian Leroy for the invitation to attend their DID Workshop; for the resource material provided and the courtesies extended in Edmonton.)



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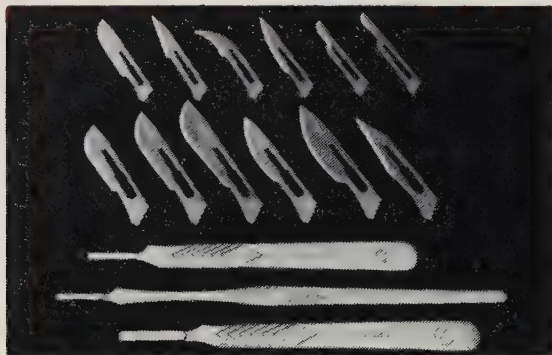
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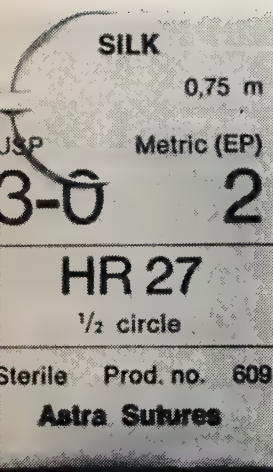
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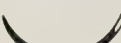
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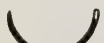
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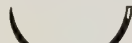
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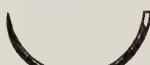
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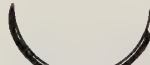
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ETHICS: CHALLENGE AND CRISIS

Part I, What Ethics is not

*By Professor Arthur Schafer,
Director, Centre for Professional and Applied Ethics,
University of Manitoba; Head, Section of Bio-medical Ethics,
Faculty of Medicine, University of Manitoba.*

Editor's Note: Times are changing! And so are some of the "rules of the game" in dentistry. The Journal has invited Professor Arthur Schafer to submit a Three-Part series on Ethics. The opinions expressed within these articles are those of Professor Schafer and not necessarily in agreement with opinions, policies or guidelines of the Canadian Dental Association, any of the Corporate Bodies or licensing authorities.

The Journal invites the interest and input of the readers. Please send your comments to the Editor promptly. As space permits, your comments will appear in future issues of this Journal. All letters will be forwarded to CDA's Council on Ethics, for deliberation and consideration.

The Author: Professor Schafer is currently Director of the Centre for Professional and Applied Ethics, Professor in the Department of Philosophy, Head of the Section of Bio-medical Ethics, Faculty of Medicine, and Lecturer in Professional Ethics in the Faculty of Dentistry – all at the University of Manitoba.

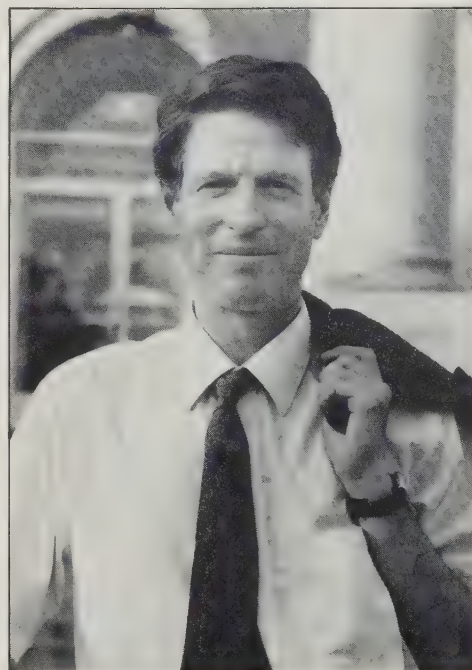
He received his undergraduate training at the University of Manitoba, and postgraduate work at University College, Oxford University, England.

Professor Schafer is a specialist in jurisprudence, moral, social and political philosophy, and bio-medical ethics.

He is widely known for his appearances as a television panellist and commentator, the writer of newspaper and magazine articles and scientific papers in professional and health sciences publications.

In the fields of direction and administration in university affairs, Professor Schafer has played major roles.

What do we mean by "Ethics"? Probably the easiest way to explain what morality requires of us is to say at the outset what Ethics is not.



Dr. Schafer

Ethics is not what our feelings tell us; it is not what our religion requires of us; it is not only doing what the law requires of us; and it is not merely doing what the prevailing social norms require of us.

Consider those who try to decide what is right and what is wrong by consulting their "gut feelings" – their conscience. The first problem such a person would encounter when faced with a difficult ethical decision is that one's "guts" are often divided, and the prompting of conscience is often unclear. Conscience may tell us to "do this" and "to do that" when "this and that" are contradictory. Thus, personal feelings may not provide a unique answer to serious problems for which we need an answer.

Moreover, we know from the study of psychology, sociology, anthropology and history that the origin of even our most deep-seated moral feelings is acculturation. The accidents of cultural conditioning (ie, what our parents, peers, schools, television have taught us) may not always provide an adequate moral compass.

Many of us have even observed that some of our feelings of moral guilt are irrational and subjective. They often originate in early childhood training, and as

***... attempting to resolve
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simply by consulting
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we come to moral maturity, most of us learn that we have to discount some feelings and strengthen others in the light of our developing experience and knowledge.

In short, attempting to resolve a moral issue simply by consulting one's moral intuition, or conscience, will often not be very useful.

If, as an alternative, we attempt to base our ethical judgement on religious beliefs, we immediately run into the problem that there are many different religions. The moral advice given by any one religion sometimes conflicts with advice given by other religions. Indeed, even within a single religious tradition there will often be conflicting moral interpretations.

For example, within Christianity, it is notoriously true that Protestants disagree with Catholics, and Presbyterians disagree with Baptists, so that there is not a unique religious perspective from which one could derive the right moral answers to an ethical dilemma.

In a multicultural and a religiously pluralistic society, such as Canada, there are many denominations of Christians as well as Moslems, Hindus, and Jews, not to mention smaller religious groups. Each of these religions offers insights, advice, rules and prohibitions, — many of which are inconsistent with those provided by the religion of their neighbors. Those who attempt to base their morality upon religion alone will find that they are unable to communicate effectively with fellow citizens, for they lack a common foundation, a *shared* point of view, by which to evaluate conduct.

One of the things for which we strive when we adopt the moral point of view is the achievement of a shared perspective on events, a perspective which could be shared by any other rational, impartial and dispassionate person, regardless of that person's religion, nationality, ethnicity, sex, age or other particular characteristics. One serious problem, then, with basing our moral judgements upon our religious commitments is that we cannot then establish with all of our fellow citizens a shared framework for moral evaluation and decision-making.

The prescriptions and prohibitions of the law are similarly unsatisfactory as a

foundation for morality. Being ethical cannot be identical with doing what the law requires. Our legal system does, of course, set a kind of minimum ethical standard. When a person violates the law, he/she is, in most cases, also violating some requirement of social living. Those who obey the law thereby avoid having the teeth of the law bite into their hide, but they could still end up being fairly mangy low-grade citizens. More specifically, a dentist could stay out of trouble with the law but still be a morally inadequate health professional.

So, while it is a legitimate aim of health professionals to stay out of trouble with the law, most ethically conscientious professionals aspire to a higher standard than the minimal safety netting provided by the legal system.

It is also important to notice, that there may be occasions when the law requires us to do something which is clearly unethical. There are bad or evil laws even in good societies and there are some soci-

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eties that are so morally corrupt that they require people regularly to do things that are morally objectionable. In an unjust society — or even a just society with some unjust laws, — conscientious persons may find themselves in conflict with a morally objectionable law. On occasion an ethical person may feel it necessary to ignore or disobey the law.

It is a worrying trend that increasingly in our hospitals and perhaps in our dental operatories, practitioners are not asking themselves, "What are my patient's health needs? What is the right sort of medical treatment for this person who needs my assistance?" Rather, they are asking, "Should I order this test, should I do this procedure (which is *not* medically indicated) in order to eliminate any chance of a lawsuit?"

Each of us, whether we are laymen or professionals, has a code of ethics or a set of moral rules, which we attempt to follow, or to which we pay at least lip service. For most of us, this moral code, or this set of "do's and don't's", is derived from the culture in which we live. We accept, we internalize, the prevailing norms of our society. Inevitably, each of us is heavily influenced by the cultural values of society. But it is also fair to say that one would be a morally narrow and inadequate person if one took one's sense of right and wrong entirely from one's culture, with no attempt at independent critical thought.

A morally mature, thoughtful adult attempts to analyze critically the prevailing social norms, and asks himself or herself whether the practices, norms, and mores of society meet the highest ethical standards. Thus, while each of us is inevitably influenced by the prevailing social norms, it is not enough simply to adopt these as one's own, unthinkingly and uncritically.

What each of us, as a mature citizen, attempts to do — or should attempt to do — is to develop a critical morality using only those social norms which can pass rational inspection and prove to be genuinely defensible. Those which are not rationally defensible should be rejected. △

(NEXT MONTH: DENTAL ETHICS,
GETTING THE BALANCE RIGHT)



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FETAL TOXICITY

caused by excessive maternal dietary calcium

Bernard Liebgott, DDS, PhD
Gary Srebrolow
Toronto

ABSTRACT

The effects of diet-induced maternal hypercalcemia on fetal development were studied in the CD 1 mouse. Female mice were maintained for two weeks on high calcium diets and then mated. The resulting litters were surgically removed one day prior to term and compared to control litters of untreated mice. Fetuses from the treated litters showed significantly lower birth weights and higher frequencies of missing calcification centres in the developing skeletons and dentitions. In addition, centres that had begun to calcify were not as advanced as corresponding centres in the control series. It appears that high calcium intake during pregnancy is fetotoxic and results in decreased fetal weight and retarded skeletal and dental calcification.

SOMMAIRE

On a étudié chez des souris de type CD 1 les conséquences, sur le développement des foetus, de l'hypercalcémie maternelle causée par le régime alimentaire. Pendant deux semaines, on a soumis des souris femelles à un régime élevé en calcium, puis on les a accouplées. Un jour avant qu'elles ne mettent bas, on leur a retiré leurs portées par voie chirurgicale pour

les comparer à celles de souris ordinaires témoins. Leurs foetus étaient d'un poids de beaucoup inférieur à ceux des souris témoins et, dans le développement du squelette et de la dentition, il manquait un plus grand nombre de centres de calcification. De plus, les centres qui avaient commencé à se calcifier ne l'étaient pas autant que ceux des foetus témoins. Il semble qu'une forte consommation de calcium durant la gestation serait toxique pour le foetus, entraînant une diminution de son poids et retardant la calcification du squelette et des dents.

There is a great deal of current interest in dietary supplemental calcium. It is freely available over the counter in an increasing variety of palatable forms and its consumption is particularly encouraged during the growing years, the third trimester of pregnancy, lactation, and the postmenopausal period in women. As health professionals, we are frequently consulted by patients regarding calcium supplements but, unfortunately, there is no clear-cut answer as to the benefits derived from increased calcium dietary levels. Minimum dietary calcium requirements were initially based on calcium balance studies but the results were controversial because

of the wide range of adaptation of the body to various calcium intakes. Moreover, since obvious calcium deficiency diseases are not observed in human beings, minimum calcium requirements cannot be derived from the amounts necessary to prevent or cure deficiencies.¹ Mazess et al.² point out that calcium has potent effects in turning off vitamin D metabolism and in decreasing both osteoblastic and osteoclastic activity of bone. Therefore, calcium should be considered an experimental drug until definitive studies conclusively show efficacy and demonstrate safety.

Recommended daily calcium intakes are 700 to 800 mg for young adult females and 1200 mg during the third trimester of pregnancy and lactation.³ Duggin et al.,⁴ however, have recommended that calcium supplements during pregnancy should be of the order of 2 g of elemental calcium per day. They believed, but did not demonstrate, that calcium loss to the developing fetus may be potentially detrimental to maternal bones and teeth. There is some evidence of this from the animal experiments of Lai et al.⁵ Pregnant rats received calcium-free, 0.6 per cent, and 1.0 per cent calcium diets. Mothers maintained during pregnancy on calcium-free diets were found to have significantly smaller total calcium and femur

TABLE I

The effects of high maternal calcium diet on mouse fetuses examined following fetal recovery on gestation day 17

Group	No. of litters	Total No. of fetuses	Mean no. of implants/litter	Mean mortality rate/litter (%)	Mean of mean weights/litter (g)	Mean of mean serum Ca ⁺⁺ levels/litter (mg/100 ml)
CONTROL	13	153	11.77	7.09	1.24 ± 0.05	9.28 ± 0.45
EXPERIMENTAL	13	174	13.39	8.39	0.98** ± 0.04	10.30** ± 1.00

* $p \geq 0.05$
** $p \geq 0.01$

calcium levels than the mothers maintained on 0.6 per cent and 1.0 per cent calcium diets. Interestingly, however, fetal weights were significantly higher in the calcium-free group in comparison to the higher calcium groups. On the other hand, Walker⁶ believes that low calcium intake during pregnancy does not prejudice bone composition, density, or dimensions based upon studies of human populations with varying intakes of calcium. In general, he concludes that there is no evidence that a habitually low intake of calcium is deleterious to man, or that an increase in calcium intake would result in clinically detectable benefits. Calcium may be potentially harmful to the developing fetus.

Early studies using laboratory rodents focused on calcium/phosphorous balances and it was originally thought that a high ratio of these elements in the maternal diet during pregnancy resulted in skeletal malformations.⁷⁻⁹ However, the actual amounts of calcium used in these early studies were much smaller than amounts found in modern stock commercial diets. Subsequent availability of purified diets showed that the early semi-synthetic diets were actually deficient in riboflavin and/or vitamin D and their absence accounted for the malformations.¹⁰ Studies should be based, therefore, on calcium additions to a diet completely balanced in all other respects. Fairney and Weir¹¹ maintained female rats throughout pregnancy on high calcium diets (calcium carbonate added to a balanced commercial diet to achieve a 3 per cent calcium chow, and 4 per cent calcium lactate added to the drinking water) to create high plasma calcium levels. The resulting litters were smaller and the offspring weighed less and grew poorly in comparison to control litters. In addition, the animals born to mothers

fed the high calcium diets, proved to be hypocalcemic. This study, however, focused only on postnatal development and no attempts were made to study the effects of maternal hypercalcemia on the developing fetuses and in particular on the developing skeletons and dentitions.

The purpose of the present study is to determine the effects of hypercalcemia, induced in pregnant mice by means of high calcium diet supplements, on the developing fetuses.

Method

Animal Care and Breeding

Virgin outbred female mice of the CD 1 strain were maintained under controlled environmental conditions. The diet for the control group consisted of commercial Purina Rodent Chow 500 containing 1.2 per cent calcium and 0.6 per cent phosphorous by weight and distilled water *ad libitum*. The experimental group received an additional 3 per cent calcium by weight as calcium carbonate added to the chow and 4 per cent calcium lactate added to the distilled water. This diet has been shown to maintain a consistently high calcium blood level in laboratory rodents.¹² The experimental animals were maintained on this calcium-supplemented diet for at least 10 days prior to mating and the weights of both control and experimental animals were monitored to detect a possible rejection of the high calcium diet.

Both control and experimental animals were mated with male CD 1 breeders at 17:00 hours and separated the following morning at 8:00 hours. Presence of a vaginal plug was considered evidence of successful mating and this day was designated day 1 of gestation. Pregnancy diagnosis was confirmed during gestation by records of body weight and palpation.

Recovery and Preparation of Fetuses

On day 18 of gestation, at 14:00 hours, the pregnant animals were weighed and anesthetized with sodium pentobarbital (60 mg/kg body weight). Blood was drawn by IVC venipuncture for subsequent analysis by atomic spectrophotometry and then the uterus was removed and placed in a phosphate-buffered saline solution. The fetuses were dissected free of their membranes and examined for presence of a heart beat. Differences between offspring of the high calcium diet and control diet mothers were then compared using the following criteria: mortality, weight, frequency of malformations, and degree of dental and skeletal development based upon degree of calcification.

Mortality was recorded by noting the frequencies of resorption sites and dead fetuses. The surviving fetuses were weighed and then examined for gross external and internal visceral defects.

To study the stages of development of the dentitions and skeletons, the fetuses were eviscerated, fixed in a phosphate buffered glutaraldehyde/paraaldehyde solution, washed with water, and then dehydrated in increasing concentrations of ethanol up to 95 per cent. The specimens were cleared in 2 per cent KOH and stained with Alcian blue for cartilage and Alizarin red S for calcified tissue.¹³ The fetuses were then examined under a dissecting microscope to look for obvious skeletal and dental defects and missing (non-stained) or poorly calcifying (lightly-stained) areas.

Scoring of Dental and Skeletal Calcification

Just prior to term in rodents, the following skeletal centres were found to provide a particularly sensitive index of the stage

of fetal ossification: metacarpus, metatarsus, sternum, cervical and caudal vertebral bodies, and forelimb and hindlimb phalanges.¹⁴ In the present study, the number of ossification centres in each of the above regions was noted and converted to an index in the following manner. The number of centres scored for presence of an ossification centre was placed over the maximum number of ossification centres possible in that region on day 18 of gestation. For example, four cervical vertebral bodies may be counted out of a possible seven, giving an index of 4/7 or 0.57. An index of 1.0 indicates a maximum score of seven out of seven possible cervical vertebral bodies calcified.

In addition, at gestation day 18, there appeared to be wide variations in the degrees of calcification of the maxillary and mandibular incisors, interparietal bones, supraoccipital bones, hyoid bones and tympanic rings. These "volatile" areas were chosen to further represent the degree of calcification at gestation day 18 and were assigned a score of 0.0 for no calcification, 0.5 for partial or immature calcification and 1.0 for typical day 18 calcification.

Data Analysis and Statistical Procedures

The observations and recorded data were analyzed to detect significant differences between fetuses of control diet and high-calcium diet mothers. The statistical analyses were performed on a per litter rather than per fetus basis on the assumption that it is the mother and not the fetus that is the experimental unit.¹⁵ Comparisons of quantitative data derived from weighing of fetuses and blood analyses were made by means of a one-tailed Student t test. Comparisons of incidences of fetal deaths, abnormalities, and non-calcified or poorly calcified skeletal and dental centres were performed by means of a non-parametric Mann-Whitney U test.

Results
Response of Experimental Animals (Mothers) to High Calcium Diet

Prior to mating, there was no significant difference between the mean weights of the control group and the experimental group of animals. In addition, there appeared to be no difference in mating frequencies between the two groups.

There was a significant difference, how-

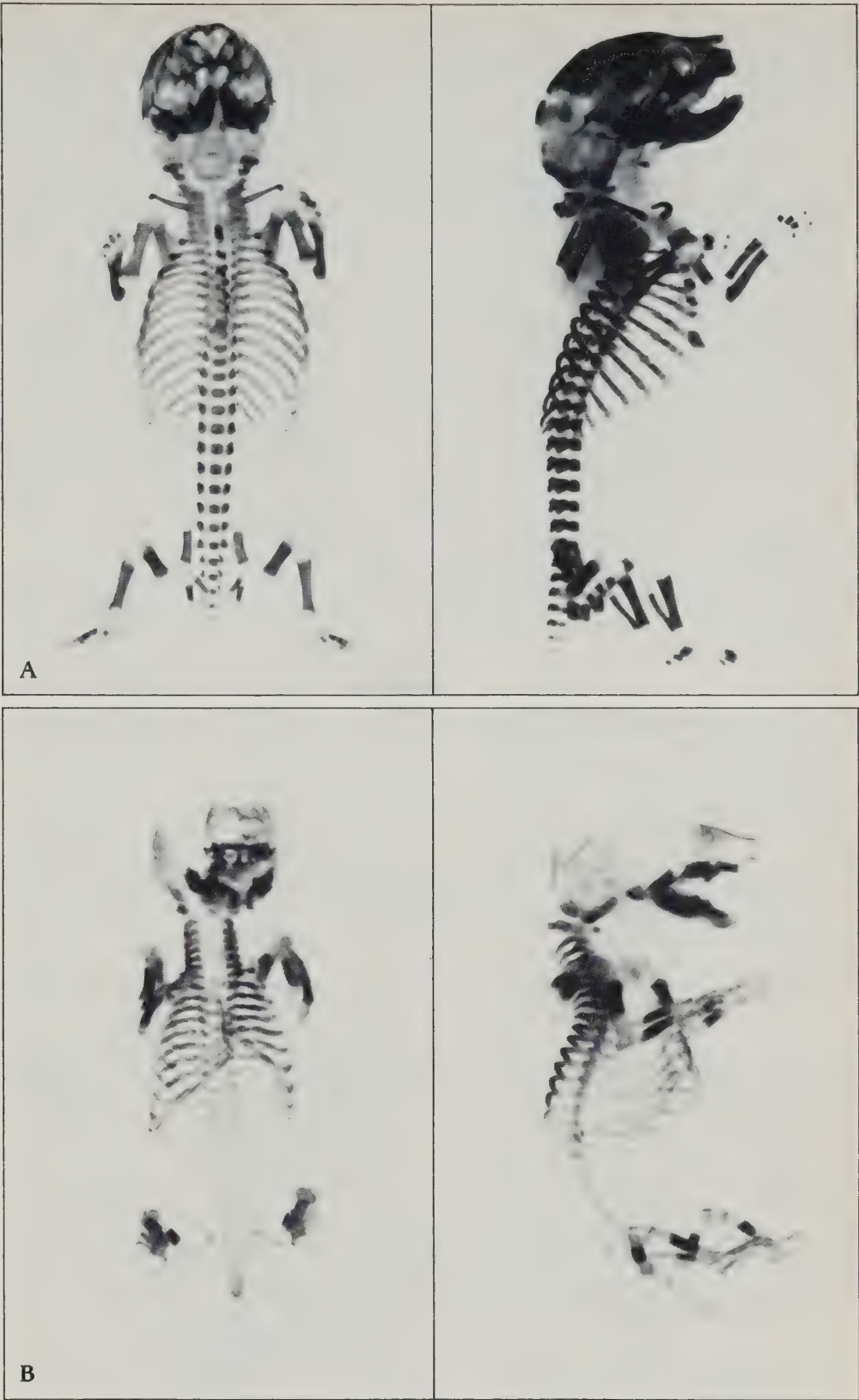


Fig. 1. Ventral and lateral views of cleared day 18 fetal mice stained with Alizarin red S and Alcian blue. A. Control fetus displaying normal ossification. B. Fetus of mother maintained on a high-calcium diet.

ever, between the mean serum calcium levels of the control and experimental groups, indicating that the high calcium diet did indeed increase serum calcium levels (Table I). It should be borne in mind, however, that the serum calcium

levels of the treated group varied according to the time of the last feeding. It is expected, therefore, that readings from this group would vary between normal and high, depending upon the proximity of the drawing of blood to the last feeding.

TABLE II

The effects of high maternal calcium diet on calcification indices in selected skeletal areas of fetal mice at gestation day 17

	Cervical vertebrae	Caudal vertebrae	Anterior phalanges	Metacarpals	Sternum	Posterior phalanges	Metatarsals
Maximum index at day 17	7/7	10/10	4/4	4/4	6/6	5/5	5/5
CONTROL GROUP	0.570	0.643	0.419	0.936	0.974	0.255	0.899
Mean index $\pm$ SEM	± 0.108	± 0.028	± 0.119	± 0.026	± 0.013	± 0.084	± 0.026
EXPERIMENTAL GROUP	0.014**	0.433*	0.194	0.743	0.624**	0.009*	0.651**
Mean index $\pm$ SEM	± 0.008	± 0.722	± 0.064	± 0.114	± 0.108	± 0.006	± 0.098

* $p \geq 0.05$
 ** $p \geq 0.01$

TABLE III

The effects of maternal hypercalcemia on calcification indices¹ of individual bones and teeth in fetal mice

	Maxillary incisors	Mandibular incisors	Interparietal	Supraoccipital	Hyoid	Tympanic ring	Overall ² index
CONTROL GROUP	0.801	0.981	0.802	0.646	0.743	0.963	0.738
Mean index $\pm$ SEM	± 0.079	± 0.019	± 0.068	± 0.080	± 0.086	± 0.020	± 0.049
EXPERIMENTAL GROUP	0.312**	0.673**	0.689	0.445	0.355**	0.736**	0.449**
Mean index $\pm$ SEM	± 0.081	± 0.110	± 0.117	± 0.098	± 0.094	± 0.102	± 0.074

¹ Degree of ossification (0 = non-ossified; 0.5 = partially ossified; 1.0 = fully ossified to day 17 standards)
² The mean of all 13 indices provides a general calcification score.
 * $p \geq 0.05$
 ** $p \geq 0.01$

Fetal Mortality, Weights, and Gross Abnormalities

On a per litter basis, frequencies of resorptions and fetal deaths were higher but not significantly so in the calcium-treated group. The weights of the fetuses from the calcium-treated mothers, however, were significantly lower (Table I). No gross abnormalities were detected in either the control or experimental groups.

Calcification of Fetal Skeletal and Dental Centres

A preliminary visual check of the stained fetal skeletons found very little variability of stained areas of calcification among fetuses of the control group. A wide variation of calcifying patterns, however, was noted among fetuses of the calcium-treated mothers, ranging from very little calcification to almost typical day 18 control patterns (Fig. 1). A summary of the mean indices of calcification of the seven

skeletal regions chosen for comparison is presented in Table II. The mean indices representing the number of calcified cervical vertebrae, sternbrae, posterior phalanges, metatarsals, and caudal vertebrae of the fetuses from the high calcium group were found to be significantly smaller in comparison to the control animals. The mean indices of the phalanges and the metacarpals of the forelimbs, although lower, were not significantly lower than those of the control group.

The indices representing the degrees of calcification of the selected bones and teeth are shown in Table III and the scores for the maxillary and mandibular incisors, hyoid bone and tympanic ring were found to be significantly lower in the calcium-treated group. The scores for the interparietal and supraoccipital bones in the calcium-treated group, although smaller, were not found to be significantly different from those of the control group.

Mean combined scores for all the centres and bones studied were significantly lower in the calcium-treated group.

Discussion

The results indicate that high calcium intake in mice during pregnancy lowers fetal weights and retards skeletal and dental development and calcification of the fetuses. The mechanism by which this occurs, however, is speculative at this point.

During normal pregnancy, there is an active transfer of calcium ions from maternal to fetal circulation that increases during the third trimester of pregnancy, resulting in greater levels in the total and ionized calcium in the fetal circulation and a relative fetal hypercalcemia.¹⁶ This calcium shift increases maternal PTH and $1,25(\text{OH})_2\text{D}_3$ levels and these, in turn, act to increase maternal calcium absorption. Although ionized calcium flows freely across the placenta, PTH and CT do not cross the placenta in either direction.¹⁶

Kaplan et al¹⁷ found that severely elevated sheep maternal serum calcium levels resulted in moderate but significantly elevated fetal calcium levels and this led further to significant decreases in fetal PTH levels. The authors suggested that chronic maternal hypercalcemia may result in a failure of normal fetal parathyroid development, and this subsequently leads to neonatal tetany soon after birth when maternal calcium is no longer accessible and the fetus cannot mobilize its own calcium reserves. The delayed or interrupted fetal skeletal calcification noted in the present study could be due to decreased fetal PTH levels since there is *in vivo* evidence that PTH has a stimulatory effect on bone formation¹⁸ and vitamin D or its metabolites are required for the expression of the effect of PTH on bone formation.¹⁹ Furthermore, Endo et al²⁰ using explanted fetal chick femurs have shown that PTH is directly necessary for calcification and that both 1,25(OH)₂D₃ and 24,25(OH)₂D₃ together acted synergistically with PTH to directly stimulate and increase bone calcification two-fold in comparison to PTH alone.

Decreased PTH levels inhibit production of 1,24(OH)₂D₃²¹ and there is also evidence that increased serum calcium levels inhibit 1,25(OH)₂D₃ production independent of PTH levels as part of a regulatory feedback mechanism.²²

Summary

High calcium dietary intake during pregnancy in mice leads to maternal hypercalcemia which, in turn, results in delayed skeletal and dental calcification. Evidence from the literature suggests that subsequent fetal hypercalcemia results in decreased fetal PTH levels and vitamin D metabolites that are necessary for bone mineralization.

It is recommended that serum calcium levels and dietary intake of calcium and vitamin D should be carefully monitored during critical periods of embryonic and fetal development. Dietary intake of calcium during pregnancy should be restricted to established standards and excessive supplemental intake should be avoided to prevent hypercalcemia. Dentists are frequently consulted regarding the necessity of calcium supplements, and pregnant patients frequently express the fear of losing a tooth for each child or developing "soft" teeth. They should be assured that there is no evidence for this occurrence providing they follow a balanced diet as recommended by Health and Welfare Canada,³ maintain a good oral hygiene program and have regular dental checkups. Δ

ACKNOWLEDGEMENT

Funds for this study were provided by an internal grant from the Faculty of Dentistry, University of Toronto.

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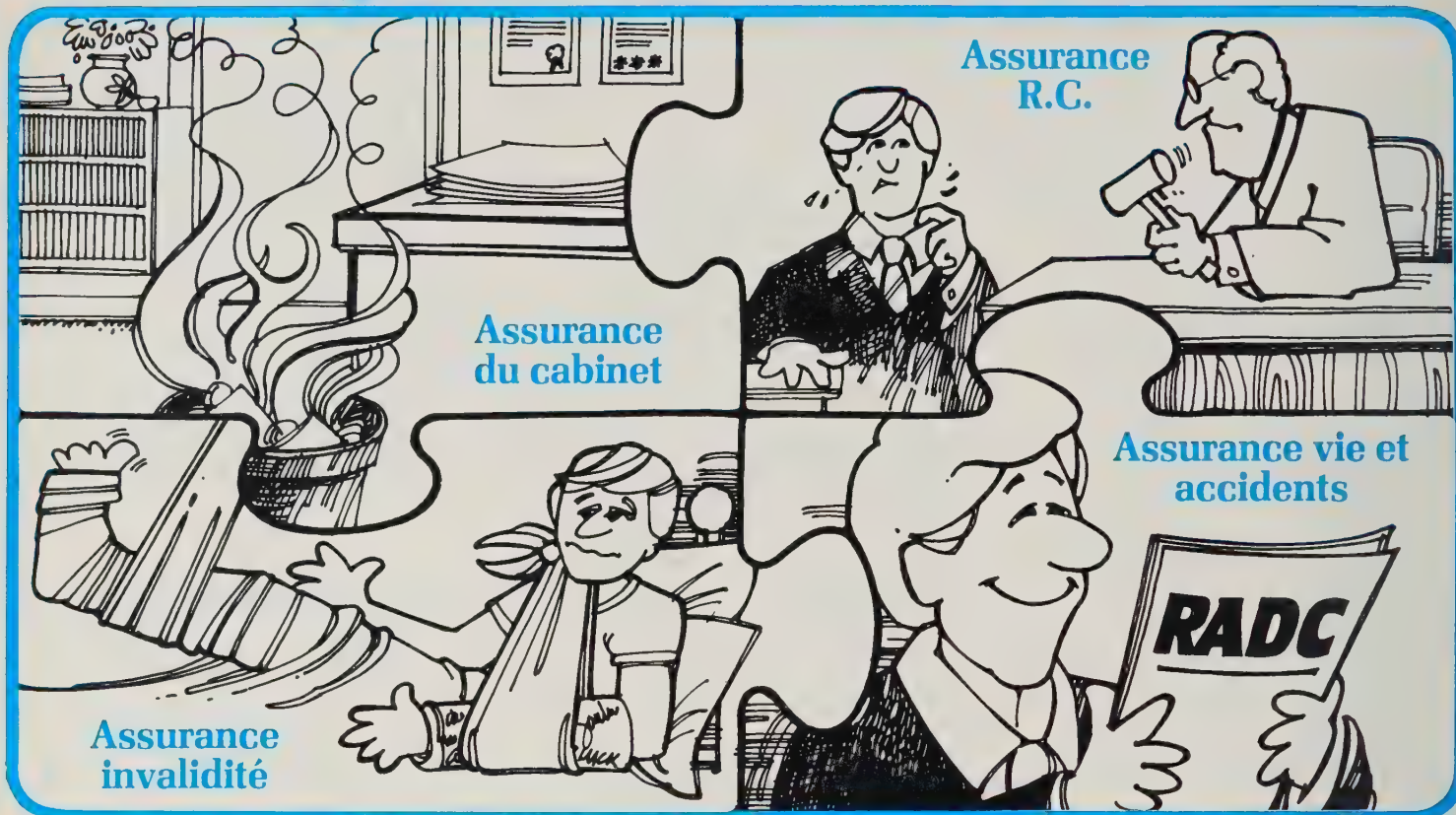
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HERPES LABIALIS TREATMENT

with acyclovir 5 per cent ointment

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ABSTRACT

Eighty patients who were culture-confirmed positive for recurrent herpes labialis were entered into a clinical trial. Sixty of these completed two episodes each in a randomized, double-blind, placebo-controlled clinical trial of 5 per cent acyclovir in a polyethylene glycol ointment base. The 5 per cent acyclovir ointment failed to show better clinical healing effects than placebo in both documented episodes. There were no serious side effects observed in either group.

SOMMAIRE

On a soumis à une expérience clinique 80 patients affligés aux lèvres d'herpès à répétition dont la culture s'est révélée positive. Parmi eux, 60 ont terminé les deux phases de l'expérience clinique en double-aveugle au cours de laquelle certains ont été traités avec une solution comprenant 5 pour cent d'acyclovir dilué dans un onguent à base de glycol de polyéthylène. Dans l'une et l'autre phase, cet onguent n'a pas donné de meilleurs résultats cliniques que le placebo. Et dans chaque groupe, on n'a relevé aucun effet secondaire sérieux.

Acyclovir (ACV), a synthetic acyclic purine nucleoside analogue, has demonstrated *in vitro* inhibitory activity against herpes simplex virus type 1 (HSV-1), herpes simplex virus type 2 (HSV-2), a varicella zoster virus and Epstein-Barr virus.^{1,2} Intravenous ACV has been shown to be effective in the treatment of HSV-1 infections in immunocompromised patients.^{3,4} However, ACV has produced inconsistent clinical benefits in the treatment of herpes simplex infection in immunocompetent individuals.

Oral ACV has been shown to be more effective than placebo in the treatment of recurrent herpes labialis (cold sores) in immunocompetent individuals.⁵ However, in previous clinical trials, 5 per cent or 10 per cent ACV ointment preparations were not beneficial.^{6,7} This lack of efficacy may relate to the timing of initiation of treatment. In the case of clinical trials of ACV in the treatment of recurrent genital herpes, early initiation of treatment has been shown to be important.⁸ This reflects the fact that ACV is a virostatic, rather than viricidal, agent and produces its greatest clinical effect through inhibition of the early viral replication phase of the disease.⁹

The objective of the present study was to test the clinical efficacy of 5 per cent ACV in a polyethylene glycol ointment base,* as compared to a placebo consisting of the polyethylene glycol base alone, when treatment was initiated at the initial prodromal phase of recurrent herpes labialis.

Materials and methods

This randomized, double-blind, placebo-controlled drug trial was approved by the Institutional Ethics Review Committee. Patients 18 years of age or older and of either sex were enrolled after providing written consent. The diagnosis of recurrent herpes labialis had been culture-confirmed for each patient during participation in a previous clinical trial.⁵ Patients were excluded if they fit the following criteria: were receiving other antiviral medication; were pregnant or nursing; fertile, sexually-active females who were not using adequate contraception; were known to have a psychiatric disorder; were allergic to ACV or immunocompro-

*Zovirax 5 per cent ointment, Burroughs Wellcome Canada, Inc.

mised. Patients entered the study following participation in an earlier double-blind placebo-controlled trial of oral ACV.⁵ A treatment-free period consisting of the lesser of a three-month interval or an intervening episode of untreated recurrent herpes labialis was required prior to entry into the study. The study medication (active drug or placebo) was packaged, randomized and dispensed in a sequential manner.

Each patient completing the study was evaluated during two treatment episodes of recurrent herpes labialis. For the first episode, treatment was initiated in the clinic within 12 hours of the first prodromal feature. For the second evaluated episode, treatment was patient-initiated within one hour of the first prodromal feature and the patient was seen in the clinic within 24 hours of initiating treatment. Study medication was applied to the lesion and surrounding skin or mucosal surfaces at two-hour intervals for five days. Patient lesions were assessed daily in the clinic for the first five days and on alternate days thereafter until completely healed.

At each clinic visit, pain was evaluated as none, mild, moderate or severe and compared to that experienced the previous day. Number, type, size and location of lesions were evaluated at each clinic visit. In addition, the stage (macular, papular, vesiculated, soft or hard crusted, residual swelling or healed) was noted by the clinician. Complete healing was defined as loss of crust with no evidence of inflammation or residual swelling.

All patients kept a home diary to record their evaluations of these same parameters twice daily, and home records were evaluated during each clinic visit. Patients were questioned regarding possible adverse drug effects. In addition to recording values for each parameter at each time interval, key outcome objectives consisting of time to onset of crusting, time to loss of crust and time to complete healing were recorded.

Treatment groups were compared in terms of time to onset of crusting, time to loss of crust, duration of pain and time to complete healing, using a two tailed t-test and chi-square test. Comparisons were made by episode as well as after combining episodes. Differences between groups for the cross-sectional area of day 5 lesions, adjusted for their cross-sectional area at day 1, were assessed by analysis of covariance. Pearson correlation coefficients were tested to examine the relationship between key variables. Significance level for statistical comparisons and correlations was 0.05.

TABLE I

Demographic Characteristics Categorized, by Treatment Group, for Patients Completing Two Episodes ($\bar{x} \pm SD$)

	Placebo	Acyclovir
Sex		
Male	7	11
Female	22	20
Age (Years)	32.8 $\pm$ 11.2	34.2 $\pm$ 9.1

TABLE II

Clinical and Healing Characteristics of Episode One Lesions by Treatment Group ($\bar{x} \pm SD$)

	Placebo	Acyclovir
Duration of pain (days)	1.04 $\pm$ 0.2	1.08 $\pm$ 0.2
Time to loss of crust (days)	7.9 $\pm$ 2.7	8.9 $\pm$ 3.6
Time to complete healing (days)	8.8 $\pm$ 3.7	7.9 $\pm$ 4.0
Cross-sectional area of day 1 lesion (mm ²)	35.7 $\pm$ 78.9	23.4 $\pm$ 33.6
Cross-sectional area of day 5 lesion (mm ²)	22.6 $\pm$ 47.8	27.3 $\pm$ 76.5

TABLE III

Clinical and Healing Characteristics of Episode 2 Lesions by Treatment Group ($\bar{x} \pm SD$)

	Placebo	Acyclovir
Duration of pain (days)	1.05 $\pm$ 0.3	1.07 $\pm$ 0.3
Time to loss of crust (days)	8.1 $\pm$ 3.2	7.6 $\pm$ 2.5
Time to complete healing (days)	7.8 $\pm$ 3.7	7.7 $\pm$ 2.7
Cross-sectional area of day 1 lesion (mm ²)	28.7 $\pm$ 36.8	23.1 $\pm$ 18.9
Cross-sectional area of day 5 lesion (mm ²)	11.7 $\pm$ 19.9	13.0 $\pm$ 17.1

Results

Sixty of the 80 registered patients completed two episodes each during the time frame of the trial. Demographic characteristics of the 60 evaluable patients are shown in **Table I**. No significant demographic differences between treatment groups were noted. All patients were Caucasian.

Clinical and healing characteristics, by treatment group, are displayed in **Table II** for episode 1 lesions. There were no significant differences between the ACV and placebo groups for the main outcome objectives of duration of pain, time to loss of crust or time to complete healing. However, there was a significant difference ($p < 0.05$) between the change in area of lesion (mm square) from day 1 to day 5 for lesion one. Adjusting for the day 1 values, there was a decrease of 34 per cent for the placebo group and an

increase of 24 per cent over the same time period for the ACV group.

Clinical and healing characteristics, by treatment group, are displayed in **Table III** for episode 2 lesions. There were no significant differences demonstrated between the ACV and placebo groups. Seven individuals reported some form of "adverse reaction" during this trial. The problems were judged as either mild or moderate by the patient and included such complaints as erythema, itching, dryness or burning sensations at the site of drug application. One patient was discontinued at her request due to moderate itching at the site of drug application. On breaking the medication code, this patient was found to be on active drug therapy. The other six patients describing minor adverse reactions were all receiving placebo.

Discussion

Since ACV produces its clinical effect through inhibition of the viral replication phase of recurrent herpes labialis, it must be utilized early in the course of a clinical episode.^{8,9} With this in mind, the design of the present study involved initiation of treatment within one hour of prodrome for episode 2 lesions. The entry criteria for this study included a requirement that the patients have participated in our previously reported clinical trial of oral ACV.⁵ As a result, these patients had previously been monitored during several treated episodes of recurrent herpes labialis and had been well trained in recognizing their prodrome and initiating treatment in a timely manner.

In spite of this early initiation of treatment within one hour of prodrome, 5 per cent ACV ointment was not more effective than placebo in the treatment of recurrent herpes labialis. This parallels the findings in previous studies by Spruance et al.^{6,7}

The ineffectiveness of the ACV ointment may be attributable to other factors including suboptimal concentration of active drug or inadequate absorption across intact skin or mucous membrane.^{6,7,9} It has been suggested that the polyethylene glycol vehicle in the ACV ointment offers inadequate transcutaneous absorption.¹⁰ A topical preparation of 5 per cent ACV in a modified aqueous cream* has recently been developed. Animal studies have demonstrated superior transcutaneous absorption of ACV in this vehicle¹⁰ but clinical trials of this product have yielded contradictory results.¹¹⁻¹⁵

In regard to the timing of initiation of treatment, it may be that prodrome-initiated treatment is inadequate to permit the maximal antiviral effect of this viri-static agent. Gibson et al¹⁵ have suggested that the prophylactic use of topical ACV preparations may provide greater efficacy in the management of recurrent herpes labialis.

In reviewing the population of the present study, it was found that the majority of individuals experienced a consistent "trigger" phenomenon. Considering the virostatic nature of ACV, it may be reasonable to hypothesize that future clinical trials incorporating "trigger" initiated prophylactic treatment rather than prodrome-initiated treatment with 5 per cent ACV in modified aqueous cream may yield more encouraging results. Δ

*Zovirax 5 per cent Cream, Wellcome Foundation, London, England.

This research was funded in part by a grant from Burroughs Wellcome Canada, Inc.

The authors would like to thank Dr. L.D. Tyrrell, Faculty of Medicine, University of Alberta, for his advice and medical consultation; Sheri Samuels, PAC, for her devotion to the study; and Jane Percy for her assistance with the analysis.

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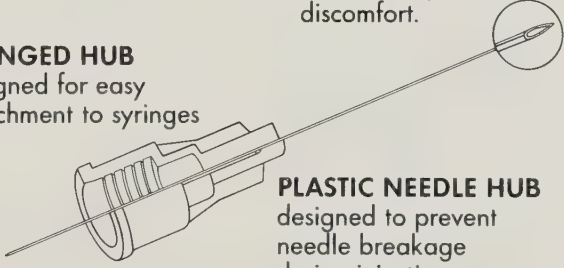
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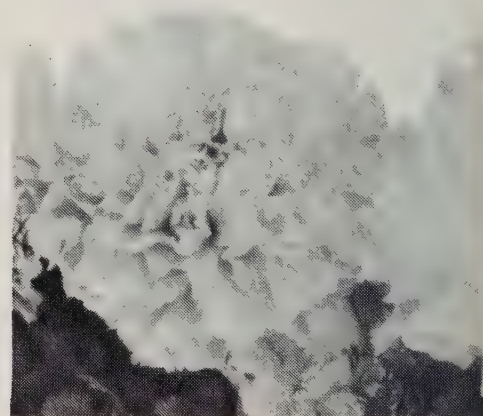
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EDENTULOUSNESS

in patients attending a university dental clinic

J.N. Hoover, BDS, PhD
R.E. McDermott, DDS, DDPH, MSc
Saskatoon, Sask.

ABSTRACT

The purpose of this study was to establish base-line data on the prevalence of edentulism in adult patients seeking care at the College of Dentistry, in the City of Saskatoon. Out of a total of 548 patients, 75 (13.7 per cent) were totally edentulous. However, there were no individuals edentulous only in the mandible. Contrary to most previous surveys, the prevalence of edentulism was higher in the males than in the females in all age groups except in the 50-59 age group. The results from this study may facilitate the evaluation of future trends in edentulism, and prosthodontic treatment needs at the same locale.

SOMMAIRE

Cette étude avait pour but d'obtenir des données de base touchant la prévalence de l'édentation chez les patients qui se faisaient soigner au Collège de médecine dentaire, à Saskatoon. Sur 458 patients, 75 (13,7 pour cent) étaient complètement édentés. Toutefois, aucun n'avait la mandibule édentée seulement. Contrairement à la plupart des études antérieures, la prévalence de l'édentation était plus élevée chez les hommes que chez les femmes dans tous les groupes d'âge, sauf les 50 à 59 ans. Les résultats de cette étude pourront faciliter l'interprétation des tendances touchant l'édentation à l'avenir ainsi que l'évaluation des besoins en traitement prothétique au même endroit.

Evidence from surveys carried out in Canada^{1,2,3} and elsewhere⁴ suggest a high proportion of edentulous individuals and denture wearers among the elderly. Since edentulousness is irreversible, total tooth loss is a valuable dental indicator as it reflects the lifetime accumulation of dental needs.⁵ In spite of the fact that edentulousness remains high in persons 65 years of age and over,

edentulous rates are falling in the "young elderly" and there is evidence of increased rates of dental care utilization by the older adult,⁶ reflecting changing attitudes on the part of both the patient and dentist.⁷ The falling edentulous ratio can also be attributed to an increased public awareness of preventive measures as well as improved financial conditions for age groups which formerly could not afford any form of treatment except extraction.

However, very little information exists concerning the prevalence of edentulism in the adult population in the Province of Saskatchewan.

The aim of the present study was to establish baseline data on the edentulousness of a dental school population in order to facilitate evaluating future trends in edentulism at the same locale.

Material and Method

A sample of 548 charts of patients, 20 years of age and older, was selected randomly by the central records staff from patients screened in 1986 and accepted for treatment at the College of Dentistry, University of Saskatchewan, Saskatoon. The charts were scanned and those charts of patients edentulous in one or both jaws at the time of the initial examination were selected for further analysis.

Results

The age and sex distribution of the sample is shown in **Table 1**. A total of 75 (13.7 per cent) individuals were edentulous in both arches, while there were no individuals edentulous only in the mandible (**Table 2**). The prevalence of edentulism was higher for males in all age groups except in the 50-59 year age group (**Fig. 1**). In both sexes, the rate of edentulism increased with age with some fluctuation for males in the 50-59 year age group. There were no totally edentulous persons of either sex in the youngest age group. In the oldest group (≥ 70 years) half the males were edentulous, while the corresponding rate for females was 38 per cent.

Discussion

The results of this study must be interpreted with some caution as the study sample was drawn from a selected population and hence may not be representative of the general adult population of the City of Saskatoon.

It is interesting to note, that unlike previous studies^{4,5,8} the present sample indicated that more men (17.3 per cent) than women (10.7 per cent) were totally edentulous. One possible explanation could be that more edentulous males than females are seeking care at this institution. In a recent study, Hoover and Tynan,⁹ clinically examined the dental status of a random sample of 260 adults (mean age 45.9 years) living in Saskatoon, and reported a prevalence of edentulousness in 20 per cent of the sample, which is higher than the 13.4 per cent in the dental school sample observed in the present study. Prevalence rates on the edentulous state in various population groups tend to vary widely, and the reasons given are, differences in the method of registration (interview or clinical inspection), demographic factors such as place of residence, geographic region, and cultural factors.⁵ Analysis of socioeconomic variables however, fail to show an association with edentulousness.⁴

It should be noted that with the exception of males 70 years of age and older, no age group approached 50 per cent edentulism. This conservative estimate may be due to the fact that the present study was drawn from an ambulatory population and did not include institutionalized or home bound persons, who may have a higher rate of edentulousness.⁸

The rate of edentulism more than doubled from the 50-59 age group to the 60-69 age group for men, but there was little difference in the corresponding age group for women. The reason for this is unknown. It is interesting to note that there were no patients in the sample of 548 persons, who were edentulous only in the mandible. This strengthens the clinical impression that dentists counsel

their patients to retain their mandibular teeth longer than their maxillary teeth. It is speculated that this is the result of the poor function achieved with full lower dentures. However, this could also be due to the fact that the mandibular six teeth are less caries prone than the other teeth, and hence are naturally retained longer, in the mouth. Similar results were obtained by Ettinger, et al.⁸ examining 1,203 residents of the State of Iowa, where only 0.1 per cent were reported as edentulous only in the mandible.

Conclusions

The present study revealed an edentulous prevalence of 13.7 per cent in adults 20 years and over seeking care at this locale. More males than females were edentulous in both arches. Future studies of a similar nature should identify the characteristics of the edentulous population seeking care at this teaching institution on an ongoing basis. The results should be of value to the planning of the undergraduate curriculum in prosthodontics and to practicing dentists and prosthodontists in evaluating trends in edentulism, in order to determine future needs and directions. Δ

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TABLE I

Age and Sex Distribution of the Sample

Age Group	No. of Persons	Males		Females	
		N	%	N	%
20-29	138	53	38.4	85	61.6
30-39	124	54	43.5	70	56.5
40-49	77	39	50.6	38	49.3
50-59	77	30	38.9	47	61.1
60-69	81	43	53.1	38	46.9
> 70	51	30	58.8	21	41.2
Totals	548	249	45.4	299	54.6

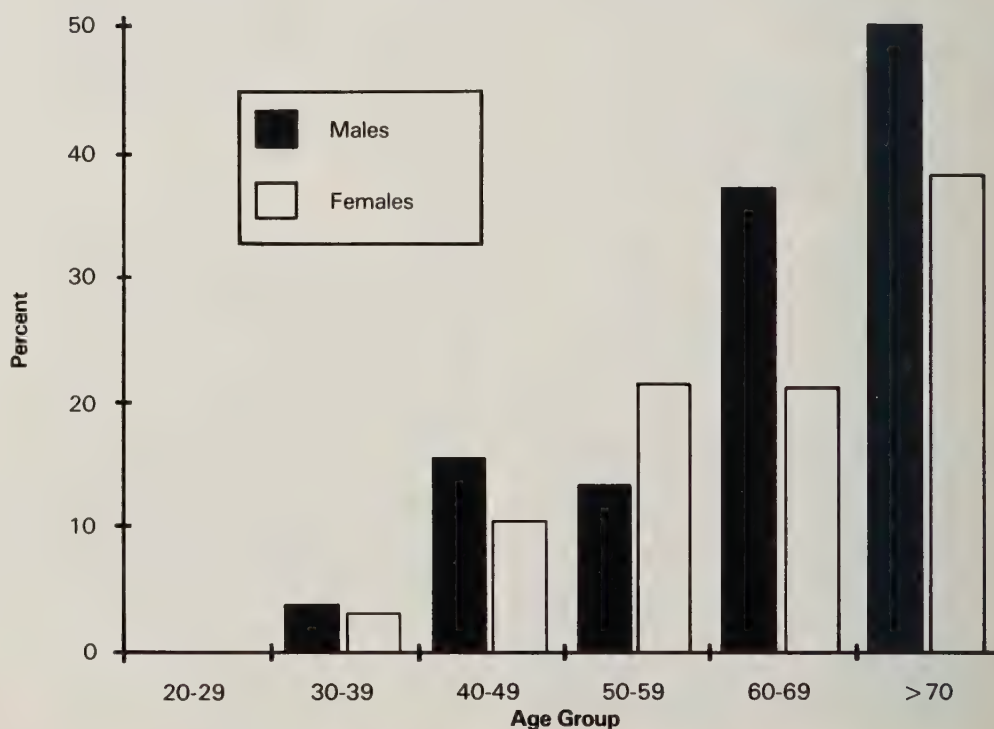
TABLE II

Edentulousness by Age and Arch

Age Group	No. of Persons	Edentulousness					
		Both Arches		Maxilla Only		Mandible Only	
		N	%	N	%	N	%
20-29	138	0	0.0	1	0.7	0	0.0
30-39	124	4	3.2	2	1.6	0	0.0
40-49	77	10	12.9	19	24.7	0	0.0
50-59	77	14	18.2	12	15.6	0	0.0
60-69	81	24	29.6	14	17.3	0	0.0
> 70	51	23	45.1	9	17.6	0	0.0
Total	548	75	13.7	57	10.4	0	0.0

FIGURE I

Edentulousness by Age and Sex



INSTRUCTIONS FOR CONTRIBUTORS

The Journal of the Canadian Dental Association welcomes the submission of previously unpublished articles, critical reviews of material on advances in dentistry and clinical reports for consideration for publication. Material is accepted for publication on the understanding that it is submitted solely to the Journal and that it has not previously been submitted elsewhere.

Scientific Articles:

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Manuscript Requirements:

Submit three (3) copies (original and 2 duplicates) to the Editor, Journal of the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6. All graphs, photographs, charts and tables must also be submitted in triplicate. Authors are also requested to submit their article on computer disk if available. IBM compatible material is preferred. For more details, please contact the editorial staff.

A covering letter designating one author as correspondent with a full address and telephone number must accompany the article. All scientific articles are subject to review by selected consultant referees. Acceptance or rejection of an article for publication is based on the referees' reports plus editorial consideration.

The editor reserves the right to edit manuscripts for stylistic consistency, clarity and conciseness. The author named as correspondent will receive a copy of the edited manuscript for checking prior to publication. Authors will also be able to proofread their article at the galley stage; however, **no changes** other than typographical corrections may be made. If the author does not respond

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Announcements

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March 6-10: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmo, Sweden. For information, contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

March 8-11: International Congress of Oral Implantologists in Paris, France. Contact: Margaret M. Jackson, 248 Lorraine Ave, 3rd Floor, Upper Montclair, NJ 07043 USA. (201) 783-6300.

March 11: Advanced Prosthodontics for Restorative Dentists a continuing education course sponsored by the Alberta AGD in Calgary, Alta at the Convention Centre. For further information, contact: Dr. Eugene Della Lana, (403) 244-4867.

March 16-19: First Asian Congress on Oral and Maxillofacial Surgery organized by the Asian Association of Oral and Maxillofacial Surgeons in Manila, Philippines. Invited speakers include E. Steinhäuser (FDR), J. Langdon (UK), Bruce Epker (USA). For further details, write: Congress Secretariat, First Asian Congress on Oral and Maxillofacial Surgery, c/o Philippine Heart Center, Suite 401, East Avenue, Quezon City 1100, Philippines.

March 18-25: 19th International Alpine Dental Conference in Courchevel 1850, France. Details from: L.W. Bryer, International Dental Foundation, 24 Cadogan Square, London SW1X 0JP. Tel: 01-235 0787.

March 23-24: 8th Jordanian Dental Congress in Jordan. Contact: Dr. Irfan Sultan, PO Box 1326, Amman, Jordan.

March 29-April 1: Review of the Biologic and Clinical Aspect of Endodontology in Ann Arbor, MI. Contact: Office of Continuing Education, School of Dentistry, University of Michigan, Ann Arbor, MI 48109-1078 USA (313) 763-5070.

April/Avril 1989

April 10-15: 22nd National Dental Congress of the German Dental Association in conjunction with 111th Annual Meeting of the German Society of Dental, Oral and Orthodontic Medicine and the German Dental Industry Association's International Dental Show in Stuttgart, Germany. Contact: Stuttgarter Mess & Kongress GmbH, Am Kochenhof 16, D-7000 Stuttgart 1, West Germany.

April 12-15: Bundesverband der Deutschen Zahnärzte in Killesberg/Stuttgart, Germany. Contact: Cornelia Hackenbruch, Bundesverband d. Deutschen Zahnärzte, Universitätsstr. 73, 5000 Köln 41, Germany.

April 17-19: Oral Complications of Cancer Therapies by the National Institute of Health in Bethesda, Maryland. Contact: Kathleen Edmunds, Prospect Associates, Suite 500, 1801 Rockville Pike, Rockville, Maryland 20852 USA. (301) 468-MEET.

April 19-23: Irish Dental Association, Annual Scientific Conference in Galway, Ireland. Contact: M. Ferguson, Irish Dental Association, 29 Kenilworth Square, Dublin, 6, Ireland Phone 978435/6.

April 26-30: 14th Asian Pacific Dental Congress at the Korea World Trade Center in Seoul, Korea. For further information, please contact: Secretariat of the 14th APDC, c/o Korean Dental Association, PO Box 41 Youngdeungpo, Seoul 150, Korea Tel: (02) 653-3351/3.

April 27-29: Journées dentaires internationales de Nice-Côte d'Azur in Nice, France. For information, write: Dr. Jean-Louis Vidal-Revel, President, Journées dentaires internationales de Nice-Côte d'Azur, 37, av. Villermont, 06000 Nice, France.

April 27-30: Ontario Dental Association 122nd Annual Spring Meeting at the Metro Toronto Convention Centre. All members and groups of the dental profession are invited to prepare a clinic for presentation at the Spring Convention. Deadline for applications is November 30, 1988. For more information, contact: Diana Thorneycroft, ODA Headquarter, 234 St. George St, Toronto, Ont. M5R 2P1.

April 28: 10th Year Class Reunion University of Toronto in the Niagara Room of L'Hotel. For further

information, contact: Dr. Bill Hawrysh (416) 626-7972 or Dr. Jack Gerrow (902) 424-8806.

April 28-30: Canadian Academy of Periodontology and Ontario Society of Periodontists Seminar to be held at the Sutton Place Hotel, Toronto. For more information: Dr. Marvin Budd, 2130 Lawrence Ave E., Suite 206, Scarborough, Ont M1R 3A6 (416) 751-8811.

May/Mai 1989

May 1-3: 9th International Dental Meeting in Nice, France. For more information, contact: Mrs. Schmitt, 37, av Villermont, 06000 Nice, France. Tel: (33) 93 98 26 09.

May 6-9: Practical Dentistry: A Look Into the 90's 119th Annual Session of the Wisconsin Dental Association. For registration information, please write or call: Wisconsin Dental Association, 633 W Wisconsin Ave, Milwaukee, WI 53203, (414) 276-4520.

May 13: Update on the Management of Periodontitis sponsored by the Alberta Academy of Periodontics in Calgary, Alberta. Contact: Alberta Academy of Periodontology, 1333-8th St S.W., Suite 505, Calgary, Alberta T2R 1M6.

May 16-20: 65th Congress of the European Orthodontic Society in Würzburg, West Germany. For details, contact: Prof. Dr. Emil Witt, Universitätszahnklinik, Pleicherwall 2, D-8700 Würzburg, West Germany.

May 21-26: 10th International Conference on Oral and Maxillofacial Surgery in Jerusalem. Contact: Dr. Eli Ronen, Chairman, Organizing Committee, 10th International Conference on Oral and Maxillofacial Surgery, PO Box 5006, Tel Aviv 61500, Israel.

May 24-27: Swiss Dental Association Convention in Switzerland. Contact: Dr. Pierre Spahn, 51, av du Casino, 1820 Montreux, Switzerland.

May 28-June 1: Les Journées dentaires du Québec 1989 at the Montréal Convention Centre. For information, please contact: Chantal Bally, ODQ, 625 René-Levesque West, 5th Floor, Montréal (Qué) H3B 1R2. (514) 875-8511.

May 29-June 2: Periodontal and Prosthetic Treatment in Advanced Cases in Malmo, Sweden. For details, contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June/Juin 1989

June 1-3: 2nd International Symposium on Osseointegrated Dental Implants in Philadelphia, PA. For registration information, contact: University of Pennsylvania, Continuing Dental Education, 4001 Spruce St, Philadelphia, PA 19104 USA.

June 1-5: 12th Congress International Association of Dentistry for Children in Athens, Greece. For details, contact: Secretariat, 12th Congress IADC, 41, Skoufa Str, Athens 106 73, Greece.

June 4-9: V International Conference on AIDS in Montréal, Québec. For more information, write to: V International Conference on AIDS, Secretariat, Kenness Canada Inc, 1010, rue Ste-Catherine ouest, bureau 628, Montréal (Québec) H3B 1G7.

June 5-9: XXV Congreso nacional y V Internacional de Odontología y Estomatología in Malaga, Spain. For information, contact: SITECC-SIASA, c/o Manuel del Palacio, 16, Edif. Costa Bella, Apto. 3, 29017 MALAGA, Spain. Tel: 29 29 20 - 29 41 43.

June 5-9: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmo, Sweden. Contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June 8-11: Alberta Dental Association Convention in Red Deer, Alberta at the Capri Centre. Theme "Unity in Dentistry". Registration: Dr. Barry Fleming, Highland Green Shopping Centre, 6315 Horn St, Red Deer T4N 6H5 Tel: (403) 346-8443.

June 19-23: 14th International Congress of Gerontology in Acapulco, Mexico. For details, contact: Congress Secretariat, Jojutla No. 91, Tlalpan CP 14090, Mexico D.F., Mexico.

June 26-30: XII Congreso de la Federación odontológica latinoamericana y XI Congreso nacional de Estomatología in Havana, Cuba. Contact: International Conference Center, Apartado 16046, Zona 16, Havana, Cuba. Tel: 20-4653.

June 28-30: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Wilma E. Motley, 18952 Blackhawk St, Northridge, CA 91326, USA.

June 28-July 1: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Mrs. D. Scanlon, 53 Ariel Crt, Nepean, Ont K2H 3J1. (613) 728-8730.

June 28-July 1: International Association of Dental Research & International Conference on Oral Biology in Dublin, Ireland. For information, contact: Ms. Eloise Bredder, Administrative Assistant, American Association of Dental Research, 1111 - 14th St NW, Suite 100, Washington, DC 20005 USA.

June 30-July 2: Dentistry 89 in Oxford, England. For details, contact: Linda Bridges, Conference Office, British Dental Association, 64 Wimpole St, London W1M 8AL. Tel: 01-935 0875.

August/Août 1989

August 21-25: 18th North Queensland Dental Convention in Cairns, Australia. For details, contact: Dr. Peter Martin, Director, 18th North Queensland Dental Convention, PO Box 388, Cairns 4870, Australia.

August 27-30: Canadian Dental Association Convention in Vancouver, British Columbia. For more information, contact: Miss Leila Chatterjee, Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6 Tel: (613) 523-1770.

August 28-30: International Conference on Blood-borne Infections in the Workplace in Stockholm, Sweden. Sponsored by WHO, ILO and NIH (USA). Abstracts invited - deadline March 31. Contact: CONGREX AB, PO Box 5619, S-114 86 Stockholm, Sweden, ATTN: Catharina Oström.

September/Septembre 1989

September: New Zealand Dental Association Convention in Napier, New Zealand. Contact: Dr. DG Arnott, 30 Munro St, Napier, New Zealand.

September: 27th Annual Convention of Iranian Dental Association and 7th International Dental Exhibition in Tehran. Contact: Dr. Ezatollah Khamessi, Iranian Dental Association International Section, PO Box 14155-3695, IR-Tehran 14, Iran.

September 2-8: 77th Annual World Dental Congress, FDI, in Amsterdam, The Netherlands. Congress Secretariat, c/o Organisatie Bureau Amsterdam bv, Europaplein 12, 1078 GZ Amsterdam, The Netherlands. (31) 20-5491212.

October/Octobre 1989

October 5-8: IX National Dental Congress of Asocacion Odontologica Dominicana in Santo Domingo. Contact: IX Congreso Nacional de Odontologica, Apartado Postal 1002, Santo Domingo, Dominican Republic.

October 24-27: 3rd International Medical, Hospital and Dental Equipment and Facilities Exhibition in Bangkok, Thailand. Contact: Elsa Wong, SHK International Services Ltd, 22/f National Mutual Centre, 151 Gloucester Rd, Hong Kong, 89587 SHKIS HX.

October 30-November 3: 107th Annual Meeting of the American Dental Trade Association in Maui, Hawaii. Contact: Nikolaj M. Petrovic, CAE President & Chief Executive Officer, American Dental Trade Association, 4222 King St, Alexandria, VA 22303 USA.

November/Novembre 1989

November 3: Annual Meeting of the International College of Dentists in Honolulu, Hawaii. For information: Dr. Richard G. Schaffer, 11717 Ambleside Dr, Potomac, MD 20854 USA.

November 4-7: 130th Annual Session of the American Dental Association in Honolulu, Hawaii. Contact: Office of International Affairs, American Dental Association, 211 E Chicago Ave, Chicago 60611 USA.

November 15-18: VI Congreso Internacional de Estomatología y X Congreso Nacional de Odontología in Lima, Peru. Contact: Dr. Ramon Castillo, Presidente de los Congresos, Alfredo Salazar 583, Of. 102, San Isidro, Lima, Peru.

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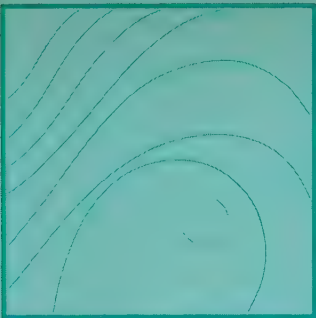
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Specialists and Generalists — A Challenge to do Better

The relationship between the general dental population and our specialty groups has shown increasing stress over the past five years. Over and above the expressed concerns of some of our generalists and specialty groups, stronger undercurrents exist within different factions that are not being vocalized, but should not be ignored. Dr. Joseph Devine, in his presidential address to the American Dental Association's House of Delegates at their Annual Meeting in Las Vegas in October 1987, listed this issue as one of his five or six top concerns facing organized dentistry today. That puts it right up there with AIDS, Third Party problems, political action, and the like. The ADA actually held a forum to discuss and share ideas. The general consensus was that a strategic plan for the two groups needed to be coordinated. "Specialty groups don't want to be surprised — and need to have a meaningful opportunity to present advice, input and comment." (Dr. Thomas Ginley, Executive Director, ADA). Dr. Arthur Dugoni, the current American Dental Association President and a specialist, stressed that groups in dentistry "waste a lot of resources" that result in duplication. He feels, and one must agree, that we need all of our organizations working together with each doing what it does best to complement one another.

There is a general concern which the writer also shares, that honest communication between the specialists and the generalists is sometimes lacking. I think it is fair, if unfortunate, to say that at the national and provincial organized dentistry levels, specialty groups are known to be most vocal and visible when a particular issue and very often it's economic!) involves them. Nor are the generalists, who after all form 90 per cent of the dental population, entirely blameless; they don't always keep the specialists informed of all the issues.

This *can, should and is* changing. Specialty groups must be kept more informed and involved. It's the old story of better communication. In return, however, specialty groups have to begin to show more of an interest in issues that affect the profession as a whole. If this could be achieved, we not only would maximize our talents, but would provide opportunities for the enhancement of mutual respect and dialogue among all of the groups that make up this great profession. Isn't this a better prospect than the uncomfortable fight for "turf" that is occasionally degrading?

There are countless general and specialty organizations in dentistry that have an unlimited amount of talent and energy to offer. All should play an aggressive role in organized dentistry as a whole, and those groups that have special expertise should share it at every opportunity at their community levels across this nation. The more we help and contribute to everyone, the more we help ourselves and the more we help our patients. Think about it.

Ron J. Markey, DDS, MSD,
Vancouver, B.C.

Editor's Note: "It's My Opinion. . . ." is an opportunity for individuals to encourage open dialogue on important dental issues and concerns. If you have a strong opinion and wish to share it with the journal readers, please write to the Editor.

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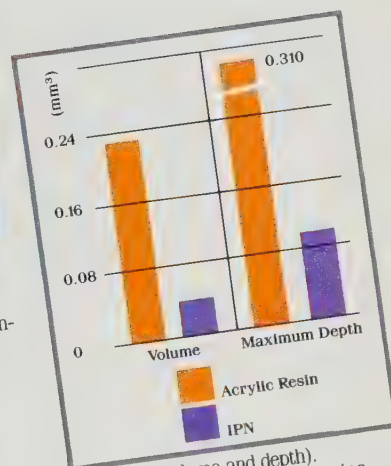


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FINLAND, 1982-87: Long-Lasting Benefits

A 30-60% reduction in new caries was seen in a 2-year study comparing 172 children aged 11-12 given xylitol gum; to a control group of 152 children not receiving the gum. When continued for a third year, an overall 73% reduction was achieved.

HUNGARY, 1981-84: Xylitol VS. Fluoride

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MICHIGAN, 1988: Reduction in Plaque

Three groups of students chewed 10 pieces of gum each per day, sweetened with xylitol, sorbitol or a xylitol/sorbitol mixture respectively. Two weeks later, the xylitol and xylitol/sorbitol groups showed a decrease in plaque from baseline values; the sorbitol group showed an increase.

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STUDY,
1988

THE MONTREAL
CHEWING GUM
STUDY,
1985-87

THE WHO
HUNGARIAN
STUDY,
1981-84

THE FINNISH
XYLITOL
STUDY,
1982-87

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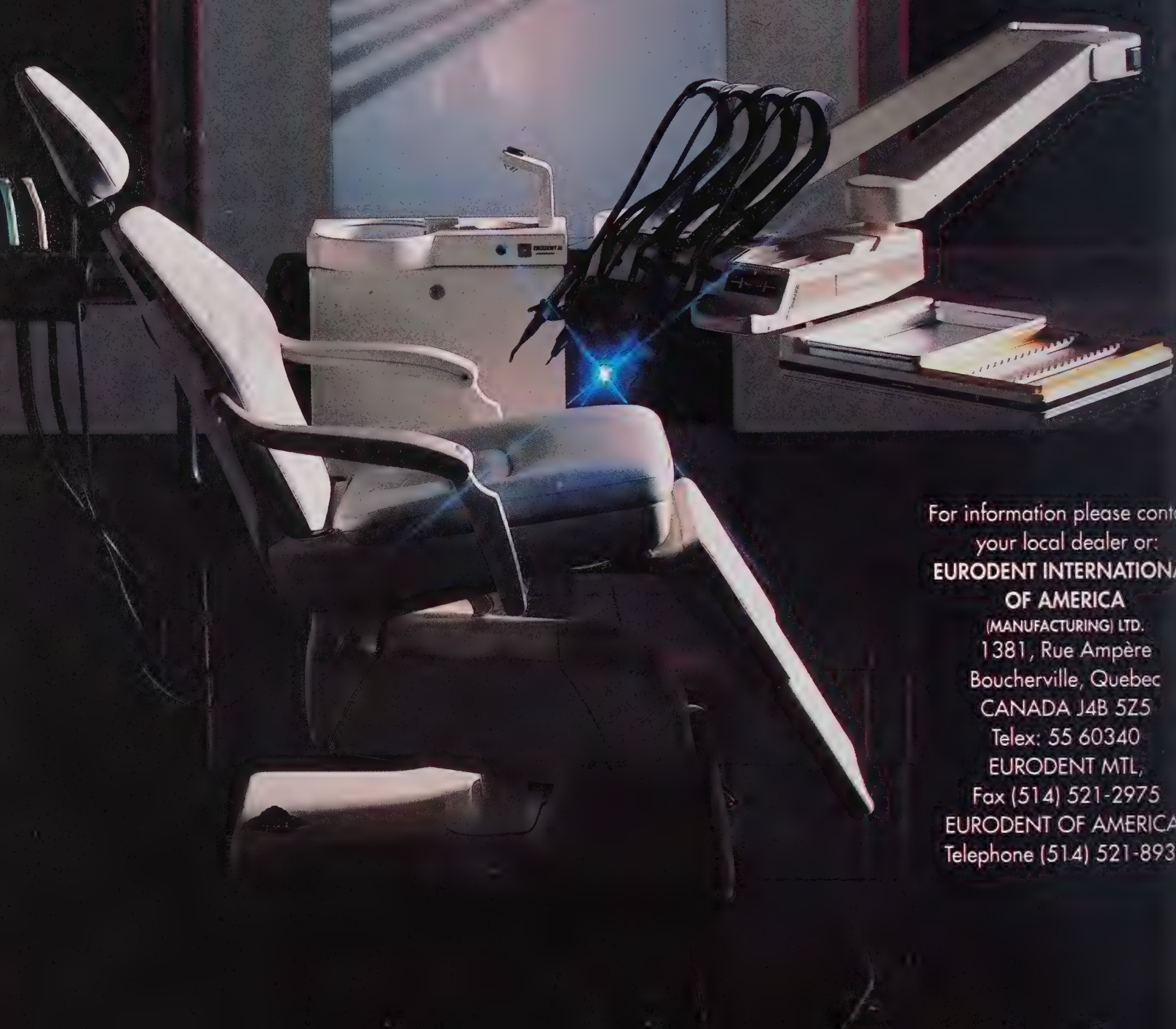
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Published monthly by the Canadian Dental Association at 1815 Alta Vista Drive, Ottawa, Ont. K1G 3Y6. Copyright 1982 by the Canadian Dental Association. Authorized as Second Class Mail Registration Number 5384. Postage paid at Ottawa

Notice of change of address should be received before the 10th of the month, to become effective the following month

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada - \$42; United States - \$44; all other - \$46. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted to the Journal.

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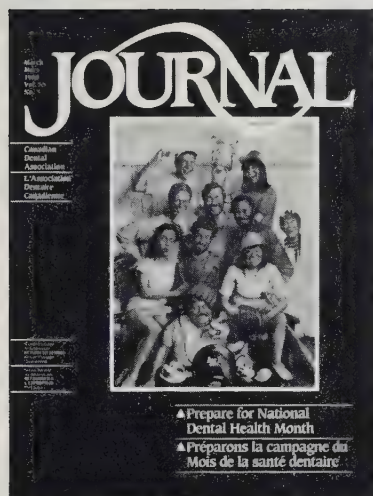
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The colorful JCDA cover picture this month is the one that appears on this year's Dental Health Month poster. It is the work of noted Canadian illustrator John Fraser, who says that one of his role models is Norman Rockwell. The Rockwell influence is evident in the warmth and charm of "Celebration of the Smile".

Order your own copy of this new Dental Health Month item, using the Order Form on page 178.

Departments

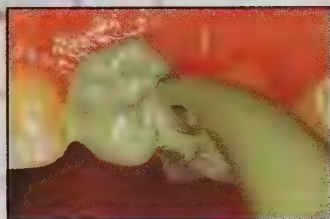
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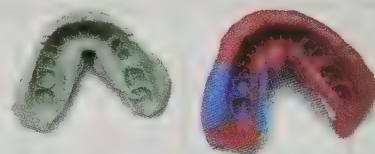
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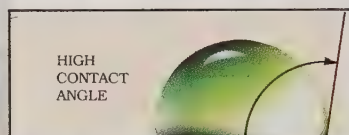
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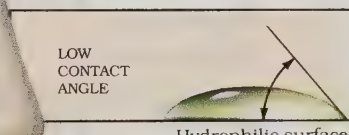
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“Celebration of the Smile”

April is Dental Health Month — a month especially set aside to alert Canadians that Dental Health is indeed a major ingredient of the total quality of life. This year, the campaign's primary focus will not be mastication, function, freedom from disease or pain, but “Celebration of the Smile.”

A Smile is infectious, it's contagious, and one of the world's greatest bargains. The returns are immeasurable. When truly genuine and freely given, the Smile elicits almost instant trust and friendship. No frown can ever do that! And it takes so very little effort and energy. We are not sure what anatomist conducted the research but it is reported that three times more muscles are required to frown than to Smile!

Dentists everywhere can take much pride in their contribution to enhancing one of Nature's most precious commodities — the Smile. What a long road it has been from the primitive attempts of just a hundred years ago when alleviating pain was the priority and any crude attempt to enhance appearance was secondary. Only 25 years ago silicate cement was often the only material available for anterior teeth. Far, far too many beautiful Smiles were marred with dark halos around poor fillings and recurrent decay. Missing teeth were commonplace; there were gaps, spaces and “flipper dentures.” It's hard to believe how rapidly we have advanced in so short a time. Taken for granted today are caries-free mouths, composite filling materials that defy detection, bonded porcelain veneers and fixed prostheses that can even improve where Nature has “faltered.”

Join the campaign! Get involved in your community's activities! In the short time since the CDA initiated its Dental Awareness Plan in 1985, public awareness of Dental Health has measurably improved. Today more than 65 per cent of the population visits a dentist regularly — almost 10 per cent more than five years ago. The 1988 Gallup Poll commissioned by CDA shows strong indication that more people are brushing and flossing than ever before.

But don't get complacent. Only 28.8 per cent of Canadians floss, 65 per cent still believe they will never get “gum” disease, and 75 per cent continue to feel that dental costs are unreasonable!

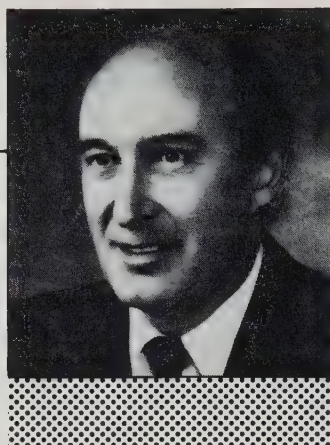
“The Celebration of the Smile” is our responsibility. The same Gallup Poll that indicated the public's increased awareness level also revealed that over 60 per cent of Canadians expect the dentist and the hygienist to be their chief source of dental health information. Not the magazine, not the pamphlet or brochure, and not the toothpaste company, but the dentist! It's still our job and it need not be confined to the office alone.

This year, more than ever before, dentists are encouraged to take the message into the community. Far too often during Dental Health Month it is the hygienist and the dental assistant who are seen at shopping centre displays, in classrooms, visiting senior citizen residences, or addressing the business luncheons.

Dentists are such a shy lot! They seem reluctant, or reticent, to “get out there and tell the world how great we are.” The public respects us, they trust us, and look to us for guidance, yet we aren't always that visible outside the four walls of the office. At this time of the year, especially during Dental Health Month, there is an opportunity for all dentists to directly inform the public how much we have contributed to “The Celebration of the Smile.” △

*P. Ralph Crawford, DMD,
Editor: Journal of the Canadian Dental Association*

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National Dental Health Month

National Dental Health Month is just around the corner. It is an opportunity for the dental profession in Canada to impress upon the Canadian public the importance of good oral health. Throughout this country dental teams — dentists, hygienists, assistants, receptionists — will convey the message to Canadians that good oral health is a highly important aspect of a person's overall health.

Unfortunately many Canadians do not regard dental care as an important health priority. We as health professionals can do much to raise this priority level, through active involvement in National Dental Health Month activities.

Public education is an essential ingredient by which to convey our message. Obviously dentists have a significant role to play in any program that would arouse concern about oral health among the Canadian people. Effective communication will not only affect attitudes toward dentistry, but result in real changes in behavior.

Communication can take a number of different forms — electronic or print media, or, at the grass roots level, in every dental office, where every member of the dental team can communicate one on one, with each patient. The ideal, making this message most effective, is that all forms of communication must be conducted concurrently. And be assured, the one on one contact with the patient in your own office can be the most effective method of all. Take full advantage of these opportunities and make certain every member of your team supports the program.

To effect a change in public attitudes toward dental health, the Canadian Dental Association and dental teams across Canada must work together to encourage regular and timely utilization of dental services. To be effective, dental awareness must raise the profile of dental health as a public concern. A number of years ago, the Canadian Dental Association adopted the theme of "Dental Health: Good for Life" as an ongoing and consistent program. Through a fully concerted effort on the part of the profession across this country, this can be a highly effective vehicle to get the message across to everyone, at every opportunity.

The Canadian Dental Association urges provincial associations and organizers at the community level to launch their own Dental Health Month programs during the month of April. Individual dental offices should use CDA's array of promotional materials to advance the "Good for Life" philosophy. Also, "Good for Life" conveys to Canadians the concept that dentistry is committed to provide credible, authoritative information concerning their own dental health. We as members of the dental team want Canadians to fully recognize that dental health is essential to the quality of life. The Canadian Dental Association is striving to promote a better and broader understanding of how Canadians can retain their dental health, and retain it for life.

The NDHM program deserves the strongest support we can give it. Let's make dental health an investment for the future! △

*Jack W. Niedermayer, BA, DDS,
President of the Canadian Dental Association.*

Dental Health Month: Community Activities that Work

Communities across Canada made great strides in last year's Dental Health Month campaign and are now gearing up for this year, with a wide range of activities already planned. Their efforts will help promote good dental hygiene and continue to shape the way Canadians feel about dentistry. Best of all, it will be an opportunity for dentists to get out of their offices and boost the profession.

The campaign works at the grass roots level, with dental societies organizing activities for their own communities. The CDA provides the resources — promotional materials, background information and media relations tips. The rest is left to the creativity and imagination of the individual society's Dental Health Month committee.

In this way, dental societies can tailor the activities to the needs of their community and target specific audiences and issues.

Through local activities, residents get a chance to talk to dentists one-on-one. Meeting outside the office lets the public see dentists as people just like themselves, and helps to remove much of the anxiety surrounding dental treatment.

One of the benefits of the campaign has been that people now realize they have an active role to play in their own dental health. Canadians are focussing more on prevention through regular dental visits for counselling and diagnosis, instead of seeking dentists to restore damage caused by neglect.

According to CDA Information Services Committee member, Dr. William Hetten-

hausen, Dental Health Month puts dentists in a "win-win" situation:

Dentistry is the first conventional health care profession to make prevention its hallmark. Through effective communication of positive dental health awareness, we are proving that it is possible to dramatically reduce the incidence of recurrent dental disease, and at the same time, increase the use of preventive, restorative and cosmetic dental services. It is an approach that is aimed at making dentistry the most respected and successful of the health professions.

Last year, dentists and related professionals were invited to share their views on radio, television and in newspapers. In fact, media relations activities associated with the Dental Health Month campaign have proved to be extremely successful in generating interest and awareness of dental issues. Since the Dental Awareness Program began in 1984, print media coverage of dentistry has expanded from 400 articles in 1985, to 1800 in 1986, to an amazing 3,300 articles in 1987.

Momentum is building after three years of national dental awareness programming. Judging by last year's successes, the most effective way to focus attention on dental issues is to stage an unusual activity or event.

Here is a cross-Canada survey of the past year's programs and a preview of coming events.

In Nova Scotia, nutritionists and dental professionals from four county health

units spoke to junior elementary students about healthy habits, combining information, demonstrations and games to make learning fun. Throughout the province children participated in poster contests — and one entry landed a CDA national award. There were mall displays staffed by dentists, dental assistants and hygienists.

This year, the Nova Scotia Dental Association plans to offer a course on children's dentistry for the dental community. All proceeds of the course will go towards the purchase of equipment for the Izaak Walton Killam Hospital dental department.

According to Nova Scotia DHM Chairman, Dr. Paul Downing, the event will benefit the community in three ways: professional development for dentists, positive PR for the profession, and a valuable addition to health care services.

Newfoundland's campaign continues to expand each year, despite logistical challenges — 140 dentists distributed over an area the size of California.

CDA materials such as "filler ads" and radio commercials were well used by the local media, and busy public health nurses distributed CDA posters to area schools.

This year, Newfoundland will use special exhibits produced by the College of Dental Surgeons of B.C. last year, and put the DHM message on milk cartons and grocery bags.

Prince Edward Island organized a full program, including: displays; radio spots

— one featuring the famous Mr. Dress-up; province-wide participation in the CDA national poster contest, with a special category for French-speaking communities; a proclamation by the Lt.-Governor; and a series of articles on bonding, fear of dentistry, and a child's first visit to the dentist.

In Quebec, the emphasis was on fun ways to spread the dental hygiene message. Residents of Jonquière were invited to play "Wheel of Fortune" — a type of dental hygiene roulette. There were contests and games, with dental health kits for the winners. "Denticulus," the dental mascot, visited information booths and children's hospital wards. In Percé, high school students wrote essays on dental health.

The fun continued in Ontario.

The "tooth fairy" visited local malls, libraries, and hospital children's wards in Keswick. The Sarnia-Lambton Health Unit organized "Dental Health Day," a chance to trade in old toothbrushes and empty dental floss containers for a fresh supply.

The Timmins Daily Press published a special eight-page insert on dental health.

Ten local "Dentists with a Heart" in North Bay provided a week of free dental services to needy people. Thanks to founder Dr. Ian McConnachie of the Ottawa Dental Society, "Dentists with a Heart" is expanding. In the past few years, thousands of people have benefited from this gesture which creates goodwill for the dental profession.

In the annual tradition, former Ontario Dental Association president Jim Brookfield threw the opening pitch at a Toronto Blue Jays game to launch Dental Health Week while Murphy the Molar cheered him on, waving a four-foot long tooth-brush.

One of the most extensive campaigns was held in Thunder Bay. A joint contest with a local radio station invited high school students to collect clues on "What Keeps Bob Smiling." Over 400 students completed entry forms which were available at high schools, dentists' offices and at a special dental health awareness booth. Thirty-two dentists and related professionals worked two-hour shifts to meet the public and answer questions.

A special "Kick Off Night" featured "the Road to Dental Health," a skit written and produced by local dentists. Hygienists demonstrated proper brushing and flossing techniques through the "Three Minute Workout."



Spectacular activities that attract the attention of the media do a great deal to get the message of good dental health across to the general public. A good example was the antics of a team of 16 enthusiastic dental assistants in Prince George, British Columbia, who travelled in their "Plaque Attack" van, blitzing shopping malls in their community. They were equipped with "anticaries artillery" and portable tape decks, playing the theme of Plaque Busters. (From the B.C. Dental Bulletin)

Nearly two hundred people attended a "Dental Health Month Dinner," including about 70 per cent of local dentists. The program included presentation of the award to the poster contest winners, and a special guest speaker.

Murphy the Molar visited hospital pediatric wards, cheering patients with balloons, stickers, and dental kits.

Other components of the extensive campaign were:

- library displays with books on dental health and free copies of "The Consumer's Guide to Dental Care"
- a presentation for children and parents on dental care for preschoolers
- commercial signs displaying the DHM message, sponsored by local merchants
- "To Your Health," a two-minute feature on dentistry shown on local television
- distribution of a special newsletter to all local dentists outlining the coming campaign
- the display of over 250 CDA posters at stores, schools, banks, malls and businesses throughout the city
- an active media relations strategy including public service announcements, interviews with dentists and the production of a series of informative articles on dentistry.

Kingston put on another outstanding

campaign, building on previous winning ideas.

"Keep Smiling Night," a dance at a local hotel featured dental songs and contests. The event raised over \$300 for the Kingston health unit's dental fund.

"Happy Visits" gave area children a chance to tour the dentist's office. An estimated two-thirds of dentists participated in the program which was so successful that it was impossible to keep up with the demand.

But the mainstay of Kingston's program is the annual "Molarthon," which invites people of all ages to walk or run for total health, and raise money for a worthy cause at the same time. Children ran a mile with Murphy the Molar and received ribbons and tooth brushes at the finish line. Adults ran a five-mile route through the city. The event raised about \$1000 towards a dental fund for low-income groups.

The Manitoba Association put its major efforts into a province-wide survey to measure attitudes on dental care. Organizers were intrigued by the 1985 CDA-sponsored Gallup Poll results and wanted to collect data to use as a baseline for future studies in the province.

"Communications captains" — troops of volunteer dentists distributed 20,000 surveys to pharmacies throughout Manitoba. Two thousand residents gave

their views on gum disease, dentists, insurance, prevention, and cost of dental services. The survey was modelled after the Five Point Prevention Plan, with added questions on related issues. The survey results attracted front-page coverage in the *Winnipeg Free Press*.

With the theme, "Building the Smile of a Lifetime," communities in Saskatchewan organized displays to promote good dental habits. Dental professionals visited children's departments in stores and distributed tooth brushes and colouring books. La Ronge held its annual "tooth brush swap" and teddy bear draw. In Melfort, the mayor snipped a strand of dental floss to inaugurate Dental Health month.

But, according to Dr. Keith Hamilton, President of the College of Dental Surgeons of Saskatchewan and current DHM Chairman, "The campaign has not really been as visible as it could be." This year, a major marketing campaign is in the works, to promote oral fitness as an essential ingredient of overall well-being and quality of life. Dr. Hamilton says that in the past, dentists have had a ready supply of patients, but today, dentists have to justify the cost of dental services and convince people of their value. Patients would rather spend their money on consumer items and special purchases than dental services, according to Dr. Hamilton.

A professional quality television commercial will be produced this year as a major element of the marketing campaign. It will be aired during Dental Health Month, and used year-round, much like the "ParticipAction" messages — which incidentally, also originated in Saskatchewan.

In Alberta, the emphasis was on prevention. Children in Red Deer played "Tooth or Consequences," a true and false quiz on healthy snacking. Special newspaper articles submitted by dentists advised parents to start their children off on the right foot by taking them to a dentist at an earlier age.

Other components of the campaign were:

- tooth brush trading posts
- a dental jingle contest, with winning entries aired on local radio stations
- a Tooth Fair organized by local health units, with games and prizes for children
- visits to nursing homes by dental professionals.

British Columbia organized a full pro-

gram of DHM activities. In Vancouver, the third-annual one-day free clinic provided dental services to needy children. At a "Toy Tooth Clinic" in Kelowna, children brought their toys for dental treatment and, at the same time, learned how to take care of their own teeth. Six dentists from Trail — the "Unsung Heroes of Dentistry" — marked dentures for seniors, proving that it's the little things that count.

Staff at the College of Dental Surgeons of B.C. worked extensively with the media, giving interviews and information. Results of the 1986 dental health survey were released during the campaign. For a new twist, dentists were asked about their patients, to determine the overall status of dental health in the

province.

This year's theme will be a continuation of last year's message, with Bob asking, "Do you like what you see?" Cosmetic dentistry will be a major element of the coming campaign.

As you can see, there are original and fun ways to promote dentistry — and a wealth of innovative ideas yet to be explored.

What does all this tell you? For one thing, that spreading the dental health message in a positive way works. Also, that dentists have a role to play in the campaign — and they can have fun doing it. Finally, that dental awareness programs are bringing measurable results with each passing year. Be a part of it — community activities work! Δ

New Feeding Disorders Research Unit at Hospital for Sick Children

The Grotto Cerebral Palsy Foundation of the Rani Ghar Grotto has announced sponsorship of a clinical research unit to investigate disorders of sucking, swallowing and chewing. Dr. David Kenny, Dentist-in-Chief at the Hospital for Sick Children, Toronto, announced that the Rani Ghar Grotto has donated an initial grant of \$20,000 and ongoing operating funds of \$10,000 per year to his unit. The nucleus of this group is Dr. Kenny and two other staff paediatric dentists, Dr. Peter Judd and Dr. Karen McPherson.

Dr. Kenny noted, "We have been involved in investigations of swallowing/breathing interactions and the development of assessment protocols for children with feeding disorders since 1981." Dr. Kenny has collaborated with Dr. Rod Moran, Director of Dentistry, Dr. Morris Milner, Director of Research at Hugh MacMillan Medical Centre and other staff of the Centre in the earlier studies and plans to continue to do the bulk of his research there. The ultrasound and video-fluoroscopy facilities at the Centre will be combined with physiological measurements of breathing to find out more about the precision timing involved in closing the throat so that food and liquids can pass to the stomach instead of the lungs to cause choking. Dr. Michael Casas, a

paediatric dentist and graduate student is currently working on this project with Dr. Kenny.

It is expected that within the year an assessment battery developed by this group to quantitate the degree of disability for feeding will be in use in a number of centres. This is the first statistically-based means of quantitating feeding disorders and has immediate clinical application for occupational therapists and others involved in the treatment of children who are unable to feed themselves.

Dr. Kenny plans to continue to work on the problems of airway maintenance during feeding, to encourage additional development of assessment tools for clinicians and to expand into clinical investigations of chewing and tooth grinding (bruxism).

The Rani Ghar Grotto is a fraternal organization that has sponsored the Grotto Orthodontic Program for Children with Special Needs since 1983. They continue their sponsorship of that service program and have just undertaken sponsorship of the new Feeding Disorders Research Unit. Since 1983, they have contributed more than \$146,000 to the two programs of the Department of Dentistry. Δ

Dr. Ron Jordan, Manitoba's new Dean

by P. Ralph Crawford, DMD

Dr. Ronald Earl Jordan will become Dean of the Faculty of Dentistry at the University of Manitoba on April 1, next. He will succeed Dean Arthur Schwartz, who steps down after 10 years of outstanding leadership. Dr. Jordan will be the third Dean in the Faculty's 30-year history.

What was Canada's first new dental school in more than 40 years, the Manitoba facility was opened in 1958 by the founding Dean, Dr. John W. Neilson. During his 20-year tenure, the Faculty achieved prominence in dental education.

Dr. Jordan is a "household name" in dentistry. He is one of the most sought-after lecturers in the world. Since 1965, he has given more than 500 presentations. He has travelled to every province in Canada, 50 of the states of the United States, and to 15 foreign countries. Widely known as one of the world's top authorities on composite resin materials, he is also the author of three textbooks, has contributed to five others, and has written more than 40 papers and 17 abstracts. A dedicated believer that education is vacuous without research, Dr. Jordan has been either the principal or co-investigator in more than 27 research projects at the University of Western Ontario.

Acceptance is significant

His acceptance of the deanship in Winnipeg is significant. Dr. Jordan is returning to the place of his roots — on the Prairies. Born in Regina in 1929, he received his early education in the Queen City and his dental degree from the University of Alberta, in 1954. It is ironic, and perhaps more than coincidental, that Dr. Jordan's very first endeavor as a dental educator was in 1959, at the then fledgling Manitoba dental faculty as a part time instructor. "Welcome home — Dr. Jordan".

He was awarded his Master of Science degree in Restorative Dentistry at the University of Washington (Seattle) in 1962. Dr. Jordan subsequently served in the Departments of Operative Dentistry at Dalhousie University and at the University of Pittsburgh.

In 1966, when the Faculty of Dentistry at the University of Western Ontario was inaugurated, Dr. Jordan became Professor and Chairman of the Department of



Dr. Ronald E. Jordan

Restorative Dentistry. He has served as Associate Dean, Clinical Affairs, at Western since 1983.

It is no secret that over the years, Dr. Jordan's name has been raised as a prospective and desirable dean of a number of Canadian dental faculties. A pertinent question in this interview therefore, was: "**Dr. Jordan, why did you accept Manitoba's invitation?**" That Faculty's accreditation status had been dropped to "provisional" twice in the past 10 years. Without hesitation, Dr. Jordan replied that his acceptance had been strongly influenced by the "opportunity for development, given the inflexibilities of the academic system in many other schools".

Manitoba has 'enormous potential'

Dr. Jordan firmly believes that the dental faculty in Manitoba has enormous future potential. "More potential than I can think of among those both in the United States and Canada. In Manitoba, one of the major advantages is a very strong basic science faculty, with on-going research. This is an advantage many schools don't enjoy. Traditionally, Manitoba has enjoyed an enviable reputation for a strong clinical program. When you combine the strengths of a basic science area with known strengths of the clinical, that's a very enviable combination indeed".

He said that "**one of my major goals in Manitoba will be to support as fully as possible the basic science areas.** (I have tremendous respect for the basic science people there). **and in addition, to give equal support to the clinical area, with a particular view to expanding clinical research**".

Commenting on the accreditation problems, which were centred mainly on clinical facilities and staffing, Dr. Jordan emphasized that he was "given full assurance by the administration that unequivocally, they were quite prepared to lend their full support to the Faculty. I found this very encouraging. It is a feature not always present in other schools". (The Manitoba Faculty is presently planning a \$4.5 million program which will completely renovate the clinical facilities.)

Dr. Jordan pointed out that many of the staffing deficiencies that had been a concern of the Canadian Dental Association's Accreditation team, had already been remedied by Dean Schwartz. "**One of my major goals over the next few years**", Dr. Jordan said, "**will be to attract some new people to the Faculty.** This doesn't mean that the existing Faculty is in any way inferior for what I would like to see developed — mainly clinical research. To develop a very strong clinical program, there will have to be some new, key appointments. And again, I have been assured of full support by the President and Administration of the University".

Graduate programs — an attraction

Manitoba's Faculty of Dentistry currently has four graduate programs. This was also one of the strength factors that influenced Dr. Jordan's decision. He commented that "graduate programs will be among some of my top priorities during the first few years. Graduate programs, research and clinical excellence all go hand in hand." He stressed that "**there is a very definite need in Canada for a graduate program in Restorative Dentistry. Presently, Canadian graduates have to go south of the border for further training**".

When he was asked if he would be able to attract clinicians who otherwise

wouldn't consider Manitoba, on the basis of his renown as a clinical investigator, and as a dean, Dr. Jordan said "yes". He added he wasn't at liberty to state exactly what key appointments will have to be made, "but there are going to be a couple to 'get the ball rolling'. Already I have some specific people in mind and I will be negotiating with them".

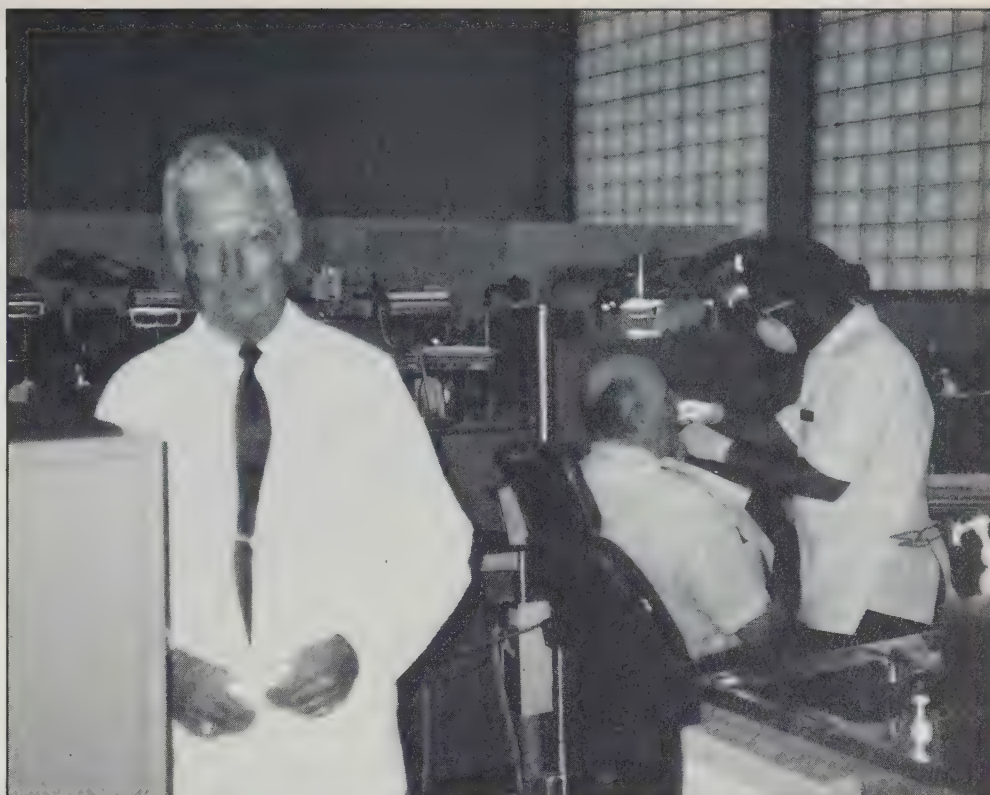
How can a dean attract outstanding people to a Prairie faculty where dollars are scarce and winters are long, Dr. Jordan was asked. "As far as money is concerned", he said, "I repeat that the University has assured me of support. However, **the main ingredient in attracting key people is the right academic environment** — a strong research basic science program coupled with a strong program in clinical research and clinical excellence. This is what highly qualified people look for. They want to go to areas where things are going on — they aren't static individuals. I wouldn't have given Manitoba a second of consideration if I hadn't thought that the opportunity for this development was there".

On a subject of much concern in the dental profession today — "busyness" — supply and demand of dental services, Dr. Jordan said that already most of the dental faculties in Canada had "taken responsible action — reducing class sizes". In Manitoba, where originally full capacity meant 32 entrants per year, that figure is now 25. This, Dr. Jordan considers ideal. He saw no reason to consider closing any dental schools in Canada. He believes that students in Manitoba, Saskatchewan, or any other province or region, should have the opportunity to go to a college that is regionally accessible.

What of the quality of today's candidates to dental schools? In contrast to the United States, Dr. Jordan believes Canadian dental faculties are not having nearly as much difficulty attracting the best of students. Part of the problem in the United States, he explained, is the many privately funded dental schools with very high tuition fees, in competition with state funded schools, with lower fees. Because it is still difficult to gain entrance to our own dental schools, many rejected Canadians are going south of the border. **Dr. Jordan called the question of high quality candidates in Canada a "relative non problem"**.

Prelicensure year — 'good sense'

When he was asked his opinion about a



Dr. Jordan discusses plans for the renovation of the main clinic at the University of Manitoba's Faculty of Dentistry.

prelicensure year for dental graduates, Dr. Jordan said "a prelicensure year makes good sense and should be explored in the future. But I think you have to structure it very, very carefully. You can't just send fifth year students out on a non selective basis. In this regard, I really do think we at Manitoba and at other schools are going to have to take a very close look at existing curricula".

If he were to take a look into his crystal ball and project what he saw on the horizon in the areas of disease patterns, dental materials and computer-assisted dentistry, he said "in all my lectures, I make the basic claim that because of the significant decrease in the caries incidence, we have virtually eliminated the disease of dental caries in our young patients. As a result, dental practice has changed enormously. The old days of drill and fill dentistry are gone forever. This is why areas such as esthetic dentistry, conservative dentistry and also geriatric dentistry, have become so enormously important. Simply because the need and the demand is there. It is essential that we train our young dentists to satisfy that need.

Geriatric dentistry

"The whole field of geriatric dentistry has been grossly missed in the past, neces-

sarily so because we were primarily concerned with training dental students to go out and operate on a drill and fill basis. Now, however, with our aging population on the increase and presenting with specific geriatric problems such as cervical erosion, root lesions, nutrition and sociological problems, **the whole area of geriatric dentistry has got to be fully expanded into our curriculum**. The development of some of our newer materials is coincidental to the development of geriatric dentistry procedures. The development of glass ionomer cement and dramatically improved bonded composites, are examples. Going back to the clinical research aspect, this is why it is imperative to develop the clinical research programs, to explore these advances so they can be directly placed into the curriculum".

The debate about mercury in silver amalgam, recently aired on CBC-TV, prompted the question whether amalgam as a filling material was on its way out. Dr. Jordan replied "not in the foreseeable future, simply because we have not found a suitable substitute. There is no material that is more reliable, no material that is more forgiving, no longer-lasting material, with the exception of cast restorations. You just don't suddenly throw out a tried and proven material and get into new systems without full justification.

Right now, *after eight to 10 years of clinical research with polymer materials, composite materials used primarily for posterior regions*, I can assure you *we have not yet found a suitable substitute for either silver amalgam or cast restorations*. Over the next five, possibly the next 10 years, we will still be dependent upon metallic systems”.

Dr. Jordan finds the involvement of the computer in dentistry and CAD/CAM aiding the fabrication of inlays, crowns and basic restorative procedures, very exciting. The technology and the potential are there and must be developed in the future. But he believes it is still not at the point of being clinically practical. “Again”, he said, “it’s back to clinical research”.

Not a ‘stay at home’ Dean

It would be difficult for those in Canada’s dental community to imagine that Dr. Jordan’s busy itinerary of presentations at symposia, seminars and conferences around the world will suddenly come to a halt because of his new appointment. Will he be a stay at home Dean?

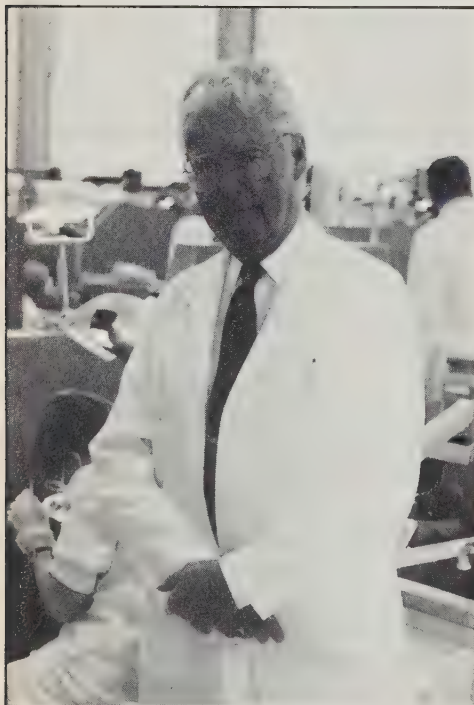
“Yes and no”, he replied. “One thing I made very clear to the selection committee was that *if they were looking for a stay-at-home, mind-the-store dean*

who does nothing except sit behind his desk five days a week, then you’re looking at the wrong person, because I’m not that kind of an individual.

“I assured the committee that if I was selected as dean, I would want to continue with my clinical research and, to a certain extent, some extramural lecturing. Virtually all the clinical research we’ve done at the University of Western Ontario has been corporately funded and *corporate funding is not attracted by unknown individuals. You have to be a well known clinician*. By its very nature, if you want to get clinical research on a continuing basis, you have to be on the lecture circuit. I have no intention of retiring from the lecture circuit, but I will be curtailing it considerably. I have already discussed the subject with the office of the President and it has been agreed that it is in the best interests

of the University that I continue my lecturing”.

It came as no surprise that the new Dean’s closing comments were about research. “I don’t think I have made any secret that *the development of research, both basic and clinical, is absolutely essential to the future of the University of Manitoba — absolutely essential! Without it, I don’t see a university going anywhere at all. If you want to develop a strong undergraduate program, how can you possibly teach your dental students new techniques and new materials if you haven’t done any research? A dental school that finds itself in a non research situation will remain static*. The development of clinical research and the continuation of excellent basic science research are absolutely essential priorities for the future.” △



Dr. Jordan in the main clinic. “One of my major goals in Manitoba will be to support as fully as possible the basic science areas . . . and in addition to expand and give equal support to the clinical area.”

CDA Retirement Savings Plan

Unit values: (Funds are valued weekly)

Fund	Unit values as at	
	January 31, 1989	December 31, 1988
Bond & Mortgage Fund	63.94994	63.62817
Common Stock Fund	15.05863	14.15282
Money Market Fund	43.04861	42.72168
Balanced Fund	26.93303	26.00630

Interest rates:

G.I.C. Fund

Term

1 yr
2 yr
3 yr
4 yr
5 yr

*Interest rates as at	
January 31, 1989	December 31, 1988
11.15%	10.85%
11.15%	10.80%
11.15%	10.80%
11.15%	10.80%
11.15%	10.80%

(*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

January 31, 1989	December 31, 1988
\$103,086,229	\$99,260,811

For further information:

Write:

CDSPI

Retirement Services Dept.
Suite 600
2 Lansing Square
Willowdale, Ontario
M2J 4Z3

or phone, toll-free:

Western and Atlantic Canada
and Ontario Area Code 807
only 1-800-268-5418
Quebec and Ontario, (except Area
Code 807) 1-800-268-3411
Metro Toronto Area 497-7117

77th annual FDI Congress to be held in Amsterdam

Amsterdam, the capital of Holland, is the site of the 77th annual World Dental Congress, from September 2 to 8, next.

The city has a wealth of historic and cultural attractions, much of it housed in 40 museums. The visitor can view such priceless treasures as Rembrandt's and Vincent van Gogh's finest works, marvelous furniture, silver and porcelain artifacts. Charming centuries-old houses line the streets in the historic inner city. It is also very prominent in terms of music. One can hear barrel organs on the street, ancient carillons in towers, noon-hour concerts. Indoors, there are about 50 theatres, concert halls and jazz clubs in the city offering classical and jazz concerts, the Dutch National Ballet, the Netherlands Opera and the Netherlands Dance Theatre.

There are endless opportunities for shopping, in department stores and specialty shops. Because of Holland's low inflation, most foreign visitors find Dutch pricing favorable.

There are also two international auction houses in Amsterdam and hundreds of art



Sightseeing in Amsterdam via a canal cruise.

galleries and antique dealers. The city has earned a reputation as an important trade centre for art that offers high quality for agreeable prices. This also applies to the numerous diamond-cutting establishments in the city.

It is possible to dine "in any language" in Amsterdam, whether you wish only a

simple sandwich or an extensive five-course dinner by candlelight. Or you can visit an old neighborhood pub with smoke-stained walls and overhead beams.

Popular convention site

Because there are so many attractions for visitors in this city, it has become a popular place for trade fairs and congresses. At the moment this city of 700,000 takes seventh position on the list of international congress cities in the world.

The RAI Congress Centre consists of 18 conference rooms, offering a total of 4,500 seats, and an auditorium for 1,750. The city's larger hotels are often used for smaller meetings and shows and have up to date facilities necessary to handle international gatherings, from 25 up to 1,025 persons.

For trade fairs and exhibitions, the RAI Exhibition Centre offers nine halls with a total floor area of some 70,000 square metres.

Tourism on a large scale

The unique character of Amsterdam itself and the fact that it is the gateway to so many European destinations has made tourism a booming business there. Hotel accommodation has increased to cope. Today there is a choice of 22,000 hotel beds, 11,500 of which are in the four and five-star category.

The majority of the tourists are from Great Britain (487,000 bednights annually); the United States (443,000), West Germany (312,000), Italy (235,000) and France (228,000).



Three VIP colleagues from the United States, gladly promoting the next FDI Congress in Amsterdam, together with their wives: Dr. James A. Saddoris (Past President of the American Dental Association), Dr. Arthur A. Dugoni (President of the ADA) and Dr. Thomas J. Ginley (Executive Director of the ADA). They are all posing in a typical Dutch costume during the joint FDI/ADA Congress in Washington D.C., last October.

1989 Comparison Annual Dentists' License and Dues

Number In Prov.	Province	License	Provincial Association	CDA	Malpractice Insurance	Total
148	NF'land	\$ 250.	\$ 950.	included	\$ 654.	\$1,854
55	PEI	950.	included	included	654.	1,604
465	N'Scotia	1200	included	included	654	1,854
248	N'Brunswick	1200	included	included	654	1,854
3,321	Quebec	780	600	\$ 315	654	2,349
5,923	Ontario	335	520	\$ 315	* 575	1,745
562	Manitoba	1200	included	included	654	1,854
381	Sask	1175	included	included	654	1,829
1,380	Alberta	1100	included	included	654	1,754
2,111	B.C.	1345	included	included	654	1,999
14,594						

NOTES:

1. *Members:* The number of dentists from each province are those contained in CDA's data base as of January 1, 1989 and includes all categories of dentists, ie., active, life, retired, post-graduate, etc. Not all dentists within a province are licensed, pay dues and fees, or have the same fee.

2. *CDA Membership:* In Ontario and Quebec, provincial statutes do not permit mandatory membership in a voluntary organization, whether provincial or national. Therefore not all dentists in these two provinces belong to either the provincial association (ODA/QDSA) or the Canadian Dental Association.

In 1988, 3340 dentists from Ontario, and 1820 from Quebec were members of the Canadian Dental Association.

3. *Malpractice Insurance:* * Ontario is the only province that has malpractice insurance 'tied-in' to annual fees. The RCDS, Ontario's Licensing Authority, administers their own malpractice insurance program.

The \$654.00 malpractice amount listed for the other nine provinces is arbitrarily selected. It is assumed all dentists have some form of malpractice insurance and \$654.00 is the minimal CDSP premium available.

4. *Annual Meeting Expenses:* Five provinces; Prince Edward Island, Quebec, Manitoba, Alberta and British Columbia have a portion of their annual meeting costs 'built-in' to the provincial association fees. Dentists in those provinces do not pay to attend provincial conventions. Δ

Comparison Dental fees and dues with other professions

Licenses, dues and malpractice amounts for medicine, law and accounting vary widely from province to province, and within each province, depending upon the category of practitioner.

The listed figures were obtained from both provincial and national organizations and from private individuals. They are averages and represent the average cost for a professional private practitioner in various Canadian regions. Δ

Lawyers

	Nova Scotia	Ontario	Manitoba	British Columbia
Prov/	\$ 625.	*\$ 980	\$ 560	\$ 515.
National	205	**	205	205
Insurance	950	***\$1,222-\$4,875	1,075	1,200
Total	\$ 1,780		\$ 1,840	\$ 3,020

Chartered accounts

Prov/				
National	\$ 700	\$ 590	\$ 715	\$ 1,035
Insurance	1,500	\$ 1,150	2,500	2,500
Total	\$ 2,200	\$ 1,740	\$ 3,215	\$ 3,535

Physicians

Prov/				
National	\$ 800	\$ 850	\$ 770	\$ 1,090
License	200	300	375	325
Insurance	1,750	1,750	1,750	1,750
Total	\$ 2,750	\$ 2,900	\$ 2,895	\$ 3,165

(Insurance for Physicians is 1988 Canadian Medical Protective Association Class 3A, Internal Medicine @ \$1,750. If it was class 6, cardiovascular surgery, neurosurgery, obstetrics, the premium would be \$9,800.)

* lawyers pay provincial licence fees. The lawyer who practises in Ontario will pay an annual fee of \$980

** Because the legal profession is administered only provincially in Canada, there is no national organization fee structure. (Membership in the Canadian Bar Association is strictly voluntary)

*** Liability insurance fees are calculated on seven levels, in accordance with the lawyer's record of claims. They range from \$1,222 to \$4,875, per annum.

International career

Dr. Jack Thomas passes in Ottawa at age of 78

Australian-born Dr. Jack Thomas, a graduate of the University of Sidney, and later, the University of Toronto, enjoyed an unusually active and varied career in dentistry, in a number of locations in southeast Asia, Australia and Canada.

Dr. Thomas died in Ottawa late in December. He was 78.

He received his DDS from the University of Toronto in 1934, and practised in that city for a short time before returning to Australia, where he established a private practice.

Southeast Asia service

Dr. Thomas then embarked on a period of service in Southeast Asia where the need for professional dental service was great. He served in Hong Kong and at several locations in China.

He became involved in hospital dentistry and was also a teacher.



Dr. Jack Thomas

Dr. Thomas made the decision to return to Canada in the early 1950s, and chose Ottawa as the site of the next phase of his dental career.

He became a very active and devoted member of the Ottawa Dental Society and was one of the founders of the Dental Assisting course set up at the major Eastern Ontario community college, Algonquin.

Military service in dentistry

Another facet of the general practitioner's career was in military dental service during the Second World War in the Royal Canadian Dental Corps. He continued to be associated with the Corps as a militia member.

Ottawa colleagues best remember his distinguished and long-time service as Chairman of the Mediations Committee of the Ottawa Dental Society.

Dr. Thomas was a very active member of the Canadian Dental Association and was an Honorary Member of the CDA.

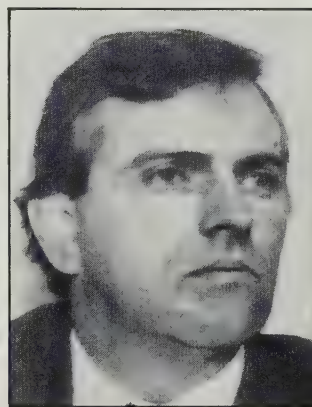
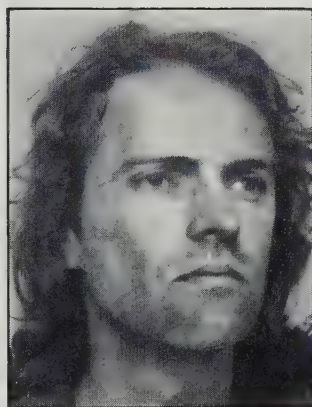
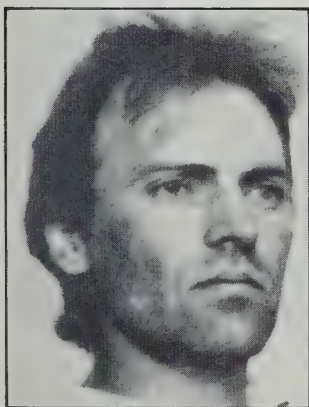
He was a Fellow of Australia's Royal College of Dentistry. Δ

RCMP seeks dental records of man charged with murder

The Royal Canadian Mounted Police General Investigation Section in Whitehorse, the Yukon, is investigating the beating murder of a man in the summer of 1972, in Whitehorse. This Journal has been contacted in the hope that dental office personnel somewhere in Canada might be able to help the RCMP locate dental records of the person charged with

this offence — Walter (Wally) Roderick Richard Code (born Nov. 30, 1950 or Nov. 30, 1947) alias Ted Clark, Bob Clark or W.R. Giswold.

The RCMP has supplied the accompanying photographs of Code in the event he has received dental treatment since 1972 under an assumed name and may be identified by a dental office.



Because the only photos of the accused — Walter (Wally) Roderick Code, a.k.a. Walter Richard Code, Ted Clark, Bob Clark, W.R. Giswold — in the RCMP's possession are about 15 years old, Constable Tottenham had them "aged" by a computer process, to more closely resemble what this man would probably look like today.

Code was charged with Non Capital Murder in 1973, nearly a year after the victim, Mr. Allyn Giswold's, remains were found. Investigation eventually revealed Code as the accused; however, efforts to locate him since that time have been negative. He has been evading authorities throughout Canada and the United States.

Dead and unidentified?

There is the possibility that Code has died, and may be an unidentified body. If so, his dental records could confirm his death. If he is still alive, it could be assumed he sought dental treatment somewhere in Canada, probably under an alias which may bear a resemblance to his actual name.

Code was a relatively transient person by nature, but resided for a number of years in Prince Albert, Saskatchewan. Police enquiries in the early stages of investigation proved negative among dental offices in that area.

If any dentist or dental office staff member is able to offer information, they should contact Constable Douglas A. Tottenham, of the General Investigation Section, Whitehorse, Yukon Territory, Y1A 1H5, or telephone (403) 667-5514. Δ

Manitoba Past Presidents honor Executive Director



On a recent occasion, 21 past presidents of the Manitoba Dental Association, along with numerous friends and associates, gathered at a special dinner to say "thanks" to Ross McIntyre (seated, third from right) on the occasion of his 20 years as Executive Director of the Association. Δ

The Quebec Association of Orthodontists (QOA) has named Dr. Sam Israelovitch as President for the 1988-89 term of office.



Dr. Samuel Israelovitch

Other officers named to the executive are: Dr. Michel Farmer, President-Elect; Dr. Donald Taylor, First Vice President; Dr. Alain Brault, Second Vice President; Dr. Louis Fronenberg, Treasurer; Dr. Yves Tellier, Secretary; Dr. Danielle Boivin, Member without Portfolio; Dr. Morris Wechsler, as Archivist and Dr. Eric Reich is the Immediate Past President.

Dr. Israelovitch is also Vice President of Alpha Omega-Mount Royal Dental Society of Montréal. He is a 1973 DDS graduate of McGill University and pursued specialty training in the graduate department of Orthodontics at the University of Montréal. He also served for several years as a clinical instructor and lecturer. Δ

Dr. André Charest, Chief of the Oral and Maxillofacial Surgery service at the Hospital of the Infant Jesus in Montréal, recently received a citation of Excellence for his contributions and devotion which have led to a high quality of care at the Hospital.

Dr. Charest began his career with the Hospital in 1952, where he proceeded to set up a structured dental department. It eventually evolved into the major franco-phone centre for oral and maxillofacial surgery in North America.

Later, he was the instigator of the oral and maxillofacial surgery course at Laval University and in 1971, was the founder of the post-graduate program there. It was noted that he has achieved world renown in his field, as a researcher and an inventor. In earlier years, Dr. Charest had, on occasion, invented a dental instrument, when the needed item was not available.

In their tributes, colleagues recalled that during his student days, he was a talented hockey player and turned his back on a career with the Montreal Canadiens to pursue a career in dentistry. Δ

At the annual meeting of the Canadian Academy of Endodontics held in Edmonton, Alberta, the 1988-89 executive was elected.

Dr. Lorne Chapnick of Toronto, has assumed the chair as Academy President. The President-Elect is Dr. Carl Hawrish of Edmonton. Dr. Barry Chapnick, of Toronto, is the Treasurer and Dr. John Phillips of Oshawa, Ontario, is the Executive Secretary. Δ



Dr. Lorne Chapnick

Vancouver 1989: Convention Countdown!

CDA Conventions: The New Look!

"What makes **this** CDA Convention so different?"

The price is right!

- All members of the B.C. College of Dental Surgeons can register for the convention at no charge.
- Reduced registration fees have been introduced this year for all out-of-province member dentists.
- A full program has been developed for dental hygienists and assistants who will be able to register for the convention at a reduced rate.

An experienced organizing committee!

After organizing a most successful "Convention '88" for the B.C. College of Dental Surgeons, CDA's local committee members Drs. Bob Hicks, Jim Stich, Ron Zokol and Bob Clarke have now united their efforts with CDA to offer you the best convention ever held!

An expanded scientific program

We all have different needs to meet in terms of continuing education in order to be successful in our daily practice. To satisfy these very needs, CDA has increased the number of speakers so you will have a greater variety of topics to choose from.

Special programs for dental hygienists and dental assistants have been planned and organized by their respective associations.

More exhibits!

Over 200 exhibits will be set up in the vast exhibit hall under the "Five Sails". Many international companies will be on hand to present you their latest products. The Committee and exhibitors have promised to keep the exhibits as "educational" as possible.

The entire "team" is together under the same roof!

The entire team of dentists, hygienists, assistants and office staff will meet to share their learning experiences. CDAA and BCDHA, represented by Bev Arduini and Marcia Lerner respectively, have prepared an outstanding program for both their members and non-members. This will also be an opportunity for prospective members to look into the benefits of membership and to ask questions.

Office personnel, our latest category created last year in Edmonton, has been given equal importance in the scientific program. Numerous lectures are geared toward these important team-players upon whom our practice depends!

Originality is the theme for the Children's and Spouses' Program

To match the Edmonton success story, these two programs have been placed in the capable hands of Diane Markey and her committee who promise you that "originality" will determine their choices! Next month's Journal will reveal the plans that Diane has in store for children and spouses.

A lavish Opening Ceremony!

For the very first time in the history of CDA conventions, the committee is planning a spectacular "Opening Ceremony" on Sunday, August 27th. This extravaganza is a must for all attendees.

Originally, this event was to be a separate ticket item, but the committee decided to include it in the convention registration fee at no additional charge, so that all team members, spouses and children alike can witness this incredible, action-packed Opening Ceremony!

Don't hear about it second-hand, attend the Opening Ceremony and become the story-teller.

And then there is ... the Social Program!

After discovering that the majority of Vancouver restaurants are closed on Sunday night, "Carnival Night" was created to fill the gap! It will be held immediately after the Opening Ceremony and is an informal and fun get-together for both families and singles. A Carnival decor will be the setting for the shows which will be interrupted only by the serving of your favourite carnival foods!

The Monday theme evening promises to be a grand occasion. Come to an evening in "black & white" featuring fine dining and dancing.

A free evening to explore Vancouver!

We know you would appreciate a chance to explore the wonderful city of Vancouver and discover the many gourmet restaurants that offer, among others, the finest fish specialties! Tuesday evening is yours to plan!

Vacation + Continuing Education = The CDA Convention in Vancouver!

August is vacation month. So why not combine your continuing education needs with a well-earned vacation! Your family or friends are welcome to accompany you and your trip will be tax deductible.

From the City of Vancouver that offered the world Expo '86,
CDA offers **you** the best convention ever held!

1989 CDA Convention

Vancouver, British Columbia ■ August 26 to 30, 1989

"Catering to **all** your interests and activities"

PRE-CONVENTION PROGRAM – AUGUST 26, 27

Pre-convention courses include...

Saturday, August 26:

Dr. Ronald E. Jordan

"Clinical Update on Esthetic Composite Bonding: Techniques and Materials"

Dr. Irvin A. Roseman

"A Better Prognosis Through Organized Endodontics" (Hands-on course limited to 40 attendees)

Sunday, August 27:

Linda Miles

Practice Management

Dr. Michael Goldfogel

"Cosmetic Technique and Management" (Hands-on course limited to 40 attendees)

CONVENTION PROGRAM – AUGUST 28, 29, 30

The preliminary lineup for the 1989 convention program includes...

Jennifer de St. Georges	Practice Management
David Frederick	Crown & Bridge
John Molinari	Infection Control and Hepatitis
Ken Zakariasen	Endodontics
Perri Goldberg & Marvin Werbitt	Implants
Dale Miles	Oral Pathology
Tom Snyder	Computers
Ernie Ambrose	Restorative Dentistry
Ian Vogan	Stress and Dentistry
Fred Weinstein	Bleaching
Joel Epstein	The Medically Compromised Patient
Terry Myers	Lasers

Many more interesting topics slated for discussion include...

Radiology • CPR • Periodontics • Crown & Bridge

EXHIBITS

Over 200 exhibits will be featured, highlighting the latest in professional equipment and supplies. To allow more time to visit this important part of the convention, the schedule for the scientific program has been designed with plenty of free time over the lunch hour and at the end of the day.

Take full advantage of the opportunity to meet with your industry partners, who are an important part of the dental health care team!

Vancouver 1989

Pre-Convention (Limited Attendance Courses)



Dr. Ronald E. Jordan

"Clinical Update on Esthetic Composite Bonding: Techniques and Materials."

- 1) Anterior composite materials
- 2) Dentin bonding agents
- 3) Posterior composite restorations
- 4) Conservative treatment of discoloured and malformed dentitions:
 - bleaching – both vital and non vital
 - direct composite veneers and bonding "add-on" techniques
 - combined bleach-veneer techniques
 - indirect composite veneers (Dentacolor; Visio Gem)
 - indirect porcelain veneers (Ceratec; Chameleon)



Linda Miles

Practice Management

- Set the stage for case acceptance
- Dental insurance
- Inventory control systems
- The three Rs of Motivation/Incentives
- How to attract and keep new patients – marketing tips
- Attract and hire a motivated staff
- Dress for success – dentists and staff

Pre-Convention (Hands-on Courses)



Dr. Irvin A. Roseman

"A Better Prognosis Through Organized Endodontics."

This seminar brings to the practitioner the principles necessary to perform predictable and effective endodontic therapy. Through step by step procedures, illustrations and case presentations, the participants will easily be able to incorporate these techniques profitably and efficiently into their practice. Following his morning lecture presentation, the afternoon hands-on session will include:

- Molar endodontics
- Endotec use
- Case discussion



Dr. Michael Goldfogel

Cosmetic Technique and Management Course

- A review of cosmetic dental materials. New developments in resin systems.
- Esthetic restoration placement. Diastema closure. Peg lateral. Freehand veneer, indirect veneer. Cervical erosion. Posterior composite.
- Colour, contour, esthetic consideration
- Managing a cosmetic practice
- Hands-on
- Clinical case examples

Dental Assistants

CDAA Program

CDAA is offering dental assistants access to the full convention program. A special round table forum will be geared specifically to dental assistants.

In a table clinic setting, more than ten different topics will be discussed, such as:

- Esthetics and importance of proper dental charting
- Asepsis of handpieces • Rubber dam placement
- Pit and fissure sealant • Impression materials

Also featured is a special lecture on Stress, Success and Excellence. Emphasis will be placed on women in the workplace vs. the home and the present and ongoing challenges facing women in the 80's and the 90's.

Dental Hygienists

In collaboration with BCDHA
Registered dental hygienists will have access to the full convention program. Lectures of special interest to hygienists will be included.

Office Personnel

The convention program is planned with the administrative staff in mind. Lectures of special interest to office personnel include among others:

Jennifer de St. Georges Practice Management
Tom Snyder Computers

Spouses Program

Look forward to an active spouses' program.

Monday's highlights include lectures by Dr. Joanne Emerman on breast cancer and Dr. Richard Warren speaking on plastic and cosmetic surgery. Lunch will follow at the Pan Pacific Hotel's scenic Prow Restaurant.

Tuesday's program features a morning of touring and shopping at Lonsdale Quay, located on the north shore of Burrard Inlet, a short trip by passenger ferry from the Convention Centre. Lunch is planned at Loops Restaurant in the Lonsdale Quay Hotel.

Wednesday morning, find out how healthy you really are with Ms Susan Chernov from the Fitness Group in Vancouver.

Children's Program

Bring the whole family, because children 5 years and over can register for a full, two day program.

Monday highlights a tour of the Science Fair, a brand new hands-on exhibit at the former site of Expo '86. After a box lunch, the children visit the Imax theatre at the Convention Centre for an entertaining film in 3-D.

Tuesday features a trip to the Vancouver Aquarium to see the beluga whale and killer whale shows.

A box lunch at the Planetarium in Vancouver's Vanier Park will be followed by a visit to the Planetarium and the viewing of their latest show, "Eye in the Sky".

Social Program

Sunday August 27

Opening Ceremony 5:00 - 7:00 p.m.

A spectacular opening extravaganza included in your registration package.

Carnival Night 7:00 - 11:00 p.m.

Immediately following the Opening Ceremony, a carnival night for the whole family.

Monday August 28

Black & White evening

A theme night of fine dining and dancing to the Big Band sound.

Airline Reservations

DENTISTS WHO PRE-REGISTER BY JULY 17, 1989 WILL BE ELIGIBLE FOR A
DRAW FOR TWO ROUND-TRIP TICKETS TO ANY AIR CANADA
DESTINATION IN EUROPE OR NORTH AMERICA (THE WINNER MUST BE
PRESENT AT THE OPENING CEREMONY ON SUNDAY AUGUST 27.)

Our meeting is registered with Convention Central, Air Canada's exclusive reservations service for convention delegates. Benefits include:

CONVENTION FARE: Save at least 15% with the new Convention fare available only through Convention Central. Should you qualify for other fares that represent greater savings, your reservations will be confirmed at the lowest available rate. (Certain advance purchase conditions apply.)

CAR RENTAL: If you like the convenience of a rental car when you arrive, Air Canada has arranged an attractive convention rate with Hertz, available only through Convention Central.

TO RESERVE: Call the toll-free number below and identify yourself and your meeting. If you customarily use a corporate travel department or travel agent, have them call on your behalf.

Call: 1-800-361-7585

Weekdays 9:00 a.m. to 8:00 p.m. EDT/EST

1989 CANADIAN DENTAL ASSOCIATION CONVENTION

Vancouver Trade & Convention Centre • August 26 - 30, 1989

ONE FORM PER PERSON
Duplicate for multiple registrations.

ADVANCE REGISTRATION FORM

With the new computerized registration system, it is *essential* that each registrant fill out a separate form. Photocopy the form for more than one registration.

Advance registrations will be accepted until *July 17, 1989* after which they will be returned to the sender. Each on-site registration will be subject to a \$25.00 administrative fee. Please print.

SURNAME: _____ FIRST NAME: _____ SEX: _____
ADDRESS: _____ (Street) _____ (City) _____ (Province)
TELEPHONE: () _____ () _____ (Residence)
(Postal Code) _____ (Office) _____

PRE-CONVENTION • AUGUST 26, 27 • Limited Attendance

SATURDAY, AUGUST 26

Dr. Ron Jordan - COMPOSITES - Lecture

Dentist\$ 150.00
Staff\$ 50.00
Dr. Irvin A. Roseman - Endodontics - Hands-on Program
Dentist\$ 175.00

SUNDAY, AUGUST 27

Ms Linda Miles - PRACTICE MANAGEMENT - Lecture

Dentist\$ 150.00
Staff\$ 50.00
Dr. Michael Goldfogel - Composites - Hands-on Program
Dentist\$ 175.00

CONVENTION • AUGUST 28, 29, 30



DENTIST

Member College of Dental Surgeons of British Columbia Nil
Member, CDA/ADA (American/Foreign)\$ 125.00
Non-member, CDA\$ 190.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



DENTAL HYGIENIST

CDHA/BCDHA Member\$ 60.00
Non-member\$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



DENTAL ASSISTANT

CDA Member\$ 60.00
Non-member\$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



OFFICE PERSONNEL

.....\$ 60.00
Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



STUDENT

☐ Dentist ☐ Hygienist ☐ Dental Assistant Nil

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



ACCOMPANYING PERSON/SPOUSE

.....\$ 90.00
Includes: Scientific sessions, exhibits, Sunday Opening Ceremony and Spouses' Program including two luncheons.



CHILD

.....\$ 40.00
Includes: Access to convention, Sunday Opening Ceremony and Children's Program including two box lunches.



SOCIAL EVENTS

Sunday Opening Ceremony - 5:00 - 7:00 p.m. (Incl. in registration) Nil
Will attend ☐ Yes ☐ No

Sunday Carnival Night - 7:00 - 11:00 p.m.

(following Opening Ceremony) per person\$ 10.00

Monday Theme Party (Limited Attendance) per person\$ 40.00

TOTAL\$

The above registration fees are paid by _____

IMPORTANT:

Please make cheque payable to:
and mail to:

Canadian Dental Association

1989 CDA Convention
c/o Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

Cancellation Policy:

- Cancellations received on or before July 17, 1989 - full refund
- Cancellations after July 17, 1989 - subject to a 25% administrative charge
- No refund after August 10, 1989

Dentists registering by July 17, 1989 will be eligible to win two tickets anywhere Air Canada flies in Europe and North America!

1989 CANADIAN DENTAL ASSOCIATION CONVENTION

August 26 - 30, 1989 ■ Vancouver Trade & Convention Centre

Vancouver, British Columbia

Hotel Reservation Form

Please check appropriate category:

☐ Dentist ☐ Hygienist ☐ Assistant ☐ Exhibitor ☐ Office Personnel ☐ Other (please specify) _____

Name: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Telephone: () ()
(Res.) (Office)

Type of Room

☐ Single ☐ Double ☐ Twin ☐ Other (please specify) _____

Indicate first three hotel choices (by numbering the boxes):

- ☐ Pan Pacific (CDA Headquarters) \$149.00 single / double
- ☐ Four Seasons (CDA Headquarters) \$135.00 single / double
- ☐ Hyatt Regency \$135.00 single / double
- ☐ Hotel Vancouver \$130.00 single / double
- ☐ Sheraton Landmark \$110.00 single / double
- ☐ Hotel Georgia (CDAA Headquarters) \$ 99.00 single / double
- ☐ New World Harbourside \$ 95.00 single / \$105.00 double

Arrival Date: _____ Departure Date: _____

Arrival Time: _____

Hotel reservations are being coordinated by the Canadian Dental Association. Hotels will not accept reservations made directly by participants. Your reservations will be confirmed to you directly by the hotel.

This reservation is guaranteed only **until 6:00 p.m.**

Information for guarantees after 6:00 p.m. will be provided with the confirmation from the hotel.
Any future changes to the reservation should be made through the Canadian Dental Association.

SEND RESERVATION FORM TO:

CDA Convention
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

DO NOT send a deposit with this Reservation
DEADLINE for Reservations: July 17, 1989

Vancouver 1989

...a jewel on stunning landscape

Late in the 18th century Vancouver's first white visitors, in their tall sailing ships – Captain James Cook and Captain George Vancouver – explored the region and liked what they saw.

Later, many of the first settlers arrived by sea, and as the settlement developed and prospered, the potential of the great natural harbour became apparent. Today it is a busy maritime centre, shipping Canadian cargoes to the Orient and receiving cargoes from across the Pacific.

The Vancouver Trade & Convention Centre honours that shipping tradition in a spectacular manner. The imaginative architecture of the highly visual facility, topped with five white canvas "sails" is like a jewel set against the blue of the harbour waters and the backdrop of towering mountains to the north.

The Centre is reminiscent of another architectural wonder on the other side of the world, the Sidney Opera House, in Australia.

The unique facility, which was created for Expo '86, is a three-level structure, and also serves as a cruise ship terminal.

It will serve as the locale for most of the events during the 1989 Annual Convention of the Canadian Dental Association in Vancouver, August 26-30, next.



Victoria's inner harbour and the Empress Hotel.
(Photo: Province of B.C. Tourism)

Vancouver Island – Old World charm

If the time you have to enjoy vacation jaunts with your family or other dental team colleagues prior to, or following the CDA Convention activities, is limited, then a visit to Vancouver Island will be a pleasant and memorable answer. A 90-minute ferry cruise through the scenic Gulf Islands sets the stage for this relaxing experience.

Victoria, the Capital City of British Columbia, is at the southern tip of Vancouver Island, and is known as the "City of Gardens". The inner harbour area of downtown Victoria offers the visitor a taste of "Olde England" with its many antique shops, museums and the popular "Afternoon Tea" at the stately old Empress Hotel.



The Convention Centre – like a ship in full sail – in Vancouver Harbour.
(Photo: First Image Production Ltd.)

Centre of the City

The Centre is a great vantage point, in the heart of Vancouver's downtown. It allows the visitor to be front row centre for world-class entertainment: concerts, theatre, opera and more. It is also centre stage for sightseeing and shopping for the dentist and his family. And it is such a visible structure that family or other dental team members who have travelled with you will have no difficulty finding you when a rendezvous is arranged there.

Also near the Empress Hotel is the impressive British Columbia Parliament Building, facing Victoria's inner harbour.

Historic and spectacular attractions abound, such as Colwood's Hatley Castle, Fort Rodd Hill and Fisgard Lighthouse, or visit the heritage sites of Craigflower Schoolhouse and Farmhouse or Point Ellice House.

Just north of Victoria is the world-famous Butchart Gardens, a symphony in floral designs, where seemingly countless species display every colour of the rainbow.



B.C. Parliament Building, Victoria. (Photo: Province of B.C. Tourism)

DENTAL HEALTH MONTH '89

A Celebration of the Smile

Dental Health Month '89 is **The Celebration of the Smile! Keep Smiling** table talkers, balloons, posters, buttons, bumper stickers . . . they're all back again because they proved so popular last year. And there's more -- T-shirts, golf shirts...and an exciting new poster.

Dress up! Decorate! Give Away! But...Celebrate the Smile in your office and community!

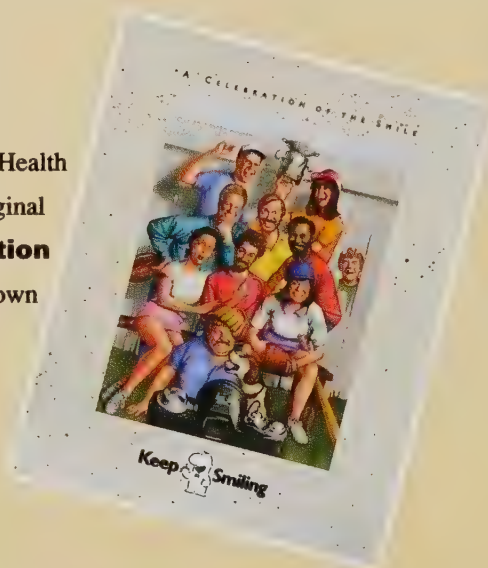
Poster Event

An extraordinary new Dental Health Month poster featuring an original interpretation of **A Celebration of the Smile** by a well-known Canadian illustrator. This is bound to be a collector's item.

size: approx 18" x 24"

CDA members: \$2.00

Non-members: \$4.00

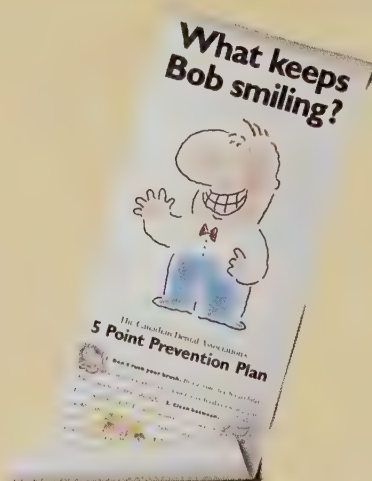


Bob Poster

Size: 12 1/4" x 36"

CDA members: \$1.00

Non-members: \$2.00



Bob's Radio Commercial

A 30-second public service announcement for use by all local and regional media relations organizers during Dental Health Month.

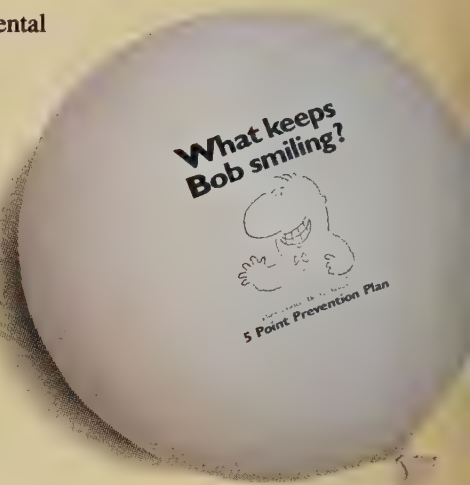
CDA members: \$8.00

Display Balloon

Size: 40" round, white

CDA members: \$7.00

Non-members: \$14.00



Two special order items:

Display Bob and the Keep Smiling Banner will be made available for Dental Health Month if the CDA receives sufficient orders.

Display Bob

Another first for Dental Health Month -- a 5' 3" free-standing **Display Bob!** Patients will be warmed by his smile as they arrive for their appointments.

CDA members: \$50.00

T-Shirts

One size only -- Xtra large.

CDA members: \$12.50

Non-members: \$25.00



Golf-Shirts

Available in S, M, L, XL.

CDA members: \$25.00 ea.

Non-members: \$50.00 ea.

Sweatshirts

Also available in S, M, L, XL.

CDA members: \$30.00

Non-members: \$60.00



Table-Talker

Size: 7" x 8" (shipped flat)
folds to 3 1/2" x 8"

CDA members: \$0.50

Non-members: \$1.00





Balloons

Size: 10" round, white. (Pkg. of 50)

CDA members : \$6.50

Non-members: \$13.00



Buttons

Size: 1 3/4" round. (Pkg. of 25)

CDA members: \$5.00

Non-members: \$10.00

FREE '89 Planning Kit

For community organizers. A helpful guide to celebrating **The Smile** in your community this April. Activity ideas, media relations tips and more...

Magnetic Bob

Give him to patients for their refrigerators, file cabinets or office equipment.

CDA members: \$0.75

Non-members: \$1.50



Stickers

Size: 1 3/4" round, peel-off back paper.

(Pkg. of 100)

CDA members : \$12.00

Non-members : \$24.00



Wallet Cards

Size: 3 5/8 x 3 3/4" (shipped flat)

folds to 3 5/8 x 1 7/8". (Pkg. of 500)

CDA members : \$15.00

Non-members : \$30.00

Contact the CDA Order Section for information on personalization.



Bumper Stickers

Size: 11 3/4" x 2 7/8"

CDA members : \$0.50 Non-members: \$1.00



Keep Smiling Banner

The widest **Bob** and **Keep Smiling** yet. Now there is a 3'x8' banner that can stretch across main street as the finishing line for a Miles of Smiles Run or serve as a backdrop for a display table.

CDA Members: \$75.00

Order your Dental Health Month materials today by mail or use our new toll-free lines!

1. By mail: Complete and mail the attached form along with your cheque, money order or VISA/ Mastercard number.

2. By phone : Call our NEW toll-free numbers to place your order:
1-800-267-6364 (Eastern Canada except area code 709) or
1-800-267-6354 (Western Canada and area code 709)

Please have your VISA or Mastercard number and expiry date ready.

Shipping: All orders will be sent by first class mail with prepaid shipping charges as follows: under \$29.99 = \$4.00; \$30.00 > \$99.99 = \$6.00; over \$100.00 = \$10.00; over \$250.00 call our toll-free numbers for applicable charges.

Please print or type

Complete and mail to: **The Canadian Dental Association**
Order Section, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6

Name: _____

Address: _____

Suite #: _____

City: _____

Province: _____

Postal Code: _____

Telephone: _____

CDA Membership Number: _____

() _____

☐ Cheque / money order enclosed ☐ VISA ☐ Mastercard

Number: _____

Expiry date: _____

Item	Quantity	Unit \$.		Total
		Mem.	Non Mem.	
Bob Poster		1.00	2.00	
Buttons (Pkg. of 25)		5.00	10.00	
Bumper Stickers		0.50	1.00	
Stickers (Pkg. of 100)		12.00	24.00	
Table-Talkers		0.50	1.00	
Poster Event		2.00	4.00	
Magnetic Bob		0.75	1.50	
Wallet Card (Pkg. of 500)		15.00	30.00	
Balloon (Pkg. of 50)		6.50	13.00	
Display Balloon		7.00	14.00	
T-Shirt		12.50	25.00	
Sweatshirt* S M L XL		30.00	60.00	
Golf Shirt* S M L XL		25.00	50.00	
Radio Commercial		8.00	16.00	
Planning Kit		Free	Free	

Special Order (Only available if sufficient orders are received)

Display Bob		50.00	n/a	
Banner		75.00	n/a	

*Please circle shirt size

Sub Total

Please allow 4 - 6 weeks
for delivery.

Ontario residents
please add 8% PST

Shipping

TOTAL



La pression monte



Vous avez besoin d'assurances pour protéger les nombreux aspects de votre vie personnelle et professionnelle. Vous serez probablement une des cibles favorites des agents ou des courtiers, mais il n'est pas toujours agréable d'être la cible de quelqu'un.

Si vous sentez que vous risquez de perdre le contrôle de vos décisions d'assurance, fermez la porte à clé et appelez le CDSPI. Nous vous donnerons des renseignements clairs et objectifs sur les options qui s'offrent à vous, dont votre propre Régime d'assurance des dentistes du Canada (RADC). Nous VOUS aiderons à conserver le contrôle de vos décisions d'assurance.

Notre service d'analyse des contrats, qui est gratuit, vous fournira une analyse claire par écrit de vos contrats actuels ou des propositions qui pourraient vous être présentées. Nous étudierons ces propositions en fonction de VOS besoins et à la lumière des garanties offertes par le RADC.

Si la pression devient trop forte, appelez le CDSPI.



CDSPI

Pour de plus amples renseignements contacter le CDSPI, sans frais, et un agent d'information se fera un plaisir de vous aider.

1.800.268.54.18 Provinces de l'Ouest, provinces atlantiques et région de l'Ontario avec l'indicatif régional 807

1.800.268.34.11 Québec et Ontario, *sauf* pour la région avec l'indicatif régional 807

497.71.17 Toronto et environs

Le Régime d'assurance des dentistes du Canada appartient à l'ADC et aux associations dentaires provinciales et est administré par le CDSPI.

Le texte ci-dessus a été approuvé par nos consultants/courtiers et nos assureurs.

Dental Health Month 1989: A Celebration of the Smile

Dental Health Month '89 is just around the corner and, as you undoubtedly know, this year's festivities will celebrate the smile.

Bob is back, fronting the "Keep Smiling" campaign, and this year John Fraser, a well-known Canadian illustrator, has created a charming interpretation of *A Celebration of the Smile*. This full-colour poster can be framed and hung in your office as a year-round reminder to celebrate the smile, and as a memento of this year's successful Dental Health Month.

To ensure that success, contact your local Dental Health Month organizers and help bring the "Keep Smiling" message to your community. If you don't know who your local organizers are, contact your Dental Society.

Your own office can also be a focal point of celebration, with special month-long displays and activities. (see 5 Ways to Celebrate Dental Health Month '89 in Your Office).

In your community and your office, April is the time to concentrate on the smile. By focussing on it, celebrating it, applauding it, and holding it up for public admiration, you can make *everyone* feel good about caring for their teeth and the part you play in ensuring their dental health.

5 Ways to Celebrate Dental Health Month '89 in Your Office:

1. DECORATE. Dental Health Month is a festival and your office is a centre of the celebration. Give it the proper party atmosphere with streamers, balloons, and "Keep Smiling" banners.

Hang up various displays: *the Five Point Prevention Plan*; pictures showing the proper way to brush and floss; a mobile of "THINGS THAT CAN STAIN YOUR TEETH" that contains such items as a tea bag and a cigarette (you don't

have to use a real cigarette — a candy one will do); draw a line down the middle of a piece of bristol board. Label one half "Snacks That are Good for Your Teeth" and glue on pictures of apples, raw vegetables, nuts and yogurt. On the other half, "Snacks That are Bad for your Teeth," display pictures of candy, chocolate bars and soft drinks.

Keep Smiling: An Ode to Dental Health Month

It's Dental Health Month,
The time of the year
When everyone's smiling
From ear to ear.

It's time to consider and pay special heed

To your teeth and your gums and the care that they need.

Our *Five Point Plan* is worthy of mention

So if I may have your *undivided* attention. . .

Don't rush your brush,
Slow it down for a spell,
Take up to three minutes
And clean your teeth well.

And then, while you're at it, please
clean between —

Make flossing a part of your daily routine.

Eat, drink, but be wary of what you consume;

Sticky, sugary snacks are worse than you presume.

Check your gums often,
Do a careful inspection —
That's one way to help keep them
Free from infection.

Don't wait til it hurts and your teeth make you moan —

The expense and pain saved will indeed be your own.

The smile you present to the world is beguiling

So show them your teeth, and remember,

"KEEP SMILING."

have to use a real cigarette — a candy one will do); draw a line down the middle of a piece of bristol board. Label one half "Snacks That are Good for Your Teeth" and glue on pictures of apples, raw vegetables, nuts and yogurt. On the other half, "Snacks That are Bad for your Teeth," display pictures of candy, chocolate bars and soft drinks.

2. CIRCULATE buttons, balloons, wallet cards, table talkers, refrigerator magnets, bumper stickers, and other Bob paraphenalia, as well as copies of the *Five Point Prevention Plan*. Order them now if you haven't had a chance. Hand them out to your patients and encourage them to take a few extras for friends and family. In that way, the "Keep Smiling" message will circulate inside your office, and your patients can help circulate it to others outside.

3. COMMUNICATE. Dental Health Month is the ideal time to talk to your patients — to have them voice their thoughts and concerns and engage in a frank discussion about their dental health. The festive atmosphere will help break the ice and make you seem more approachable, and you might even add some appropriate background music. Make a tape of some smile songs and play it in your waiting room. Suggested songs: *The Shadow of Your Smile*; *Smile (Though Your Heart is Breaking)*; *When Irish Eyes are Smiling*; *Sara Smile* (by Hall and Oates); *Let a Smile be Your Umbrella*; *When You're Smilin'* (the whole world smiles with you); *Mammy* (I'd walk a million miles for one of your smiles. . .).

4. Encourage your patients to PARTICIPATE. Provide pencils and paper and ask children to write down as many words with three letters or more they can find in the phrase "Keep Smiling." Reward their efforts with toothbrushes, dental floss, "keep smiling" buttons, stickers, balloons and Magnetic Bobs.

Ask your patients to bring in a snapshot of themselves smiling. Display them on

your bulletin board under the heading "The Smilingest Faces in (name of your community)."

Cut out pictures of celebrities' smiles and paste them on bristol board. If your patients can identify any of the smiles, award them with a button, poster or a 45 record of a smile song (see above). Patients who can identify three or more smiles can be awarded a Bob t-shirt.

Put Big Bob in your office — all 5 foot 3 wonderful inches of him. The card-board display Bob will make your patients smile. Have a camera handy to take pictures of patients (especially children) with Bob and display them on your bulletin board.

5. Most important, **CELEBRATE**. Have your entire team wear the "Keep Smiling" button. Have everyone put a bumper sticker on their car. Have your receptionist answer the phone by saying, "April is Dental Health Month . . . Keep Smiling." Above all, make Dental Health Month a time of fun and festivity, and make sure you and your staff have smiles on your faces for the entire month.

Remember, Dental Health Month may only last thirty days, but it can foster warm feelings and closer ties between dentist and patient and lead people to adopt healthier dental practices. And those are results that can last a lifetime.

Keep Smiling



CANADIAN DENTAL ASSOCIATION

CANADIAN DENTAL SERVICE PLANS INC. (CDSPI) INVITES APPLICATIONS FOR A POSITION ON ITS MANAGEMENT COMMITTEE

Qualifications

- Must be a member of the CDA and a dentist licensed in at least one Canadian province.
- Must have appropriate experience as a specialist and/or general practitioner.
- Must have demonstrated the ability and willingness to work within organized dentistry. Past service with the CDA or one of the provincial dental organization in an elected/appointed capacity would be an asset.
- Should currently be a participant in one or more of CDSPI's programs.
- Must be willing to make a long term commitment of no less than seven years of continuous service.
- Must have the willingness and ability to participate in decision making and management by consensus and have good communication skills.
- Must be willing to arrange personal and professional schedules so as to be available for all Management Committee functions. Management Committee normally meets at CDSPI headquarters in Toronto.

Duties:

Reporting to the Board of Directors, this individual will work as a part of the Management Committee being responsible for the management of the corporation as set out in a detailed job description.

Starting Date:

To commence a one-year apprenticeship period January 1, 1990; beginning regular term on January 1, 1991. Selection of a successful candidate is to take place at the August 1989 meeting of the CDSPI Board of Directors.

Please submit applications by May 15, 1989, in writing only along with a detailed resumé, to:

The Management Committee Selection Committee
c/o CDSPI
2 Lansing Square, Suite 600
Willowdale, Ontario
M2J 4Z3

All responses will be treated as confidential.

LE CDSPI EST À LA RECHERCHE DE CANDIDATS DÉSIREUX DE FAIRE PARTIE DE SON COMITÉ DE GESTION

Exigences

- Membre de l'ADC et dentiste autorisé à exercer dans au moins une province.
- Expérience pertinente comme spécialiste et/ou généraliste.
- Capacité et volonté prouvées de travailler au sein d'un organisme de la profession. Une expérience concrète au sein de l'ADC ou d'une association provinciale — par élection ou nomination — serait un atout.
- Obligation de participation effective à au moins un des programmes du CDSPI.
- Désir de s'engager à long terme pour une période ininterrompue d'au moins sept ans.
- Désir et capacité de participer au processus décisionnel et à une gestion collective, et bon sens de la communication.
- Vie personnelle et professionnelle organisée pour permettre la disponibilité pour toutes les fonctions du Comité de gestion. Ce dernier se réunit normalement au siège social du CDSPI à Toronto.

Fonctions

Le candidat retenu relève du conseil d'administration et travaille au sein du Comité de gestion. Il ou elle sera chargé de la gestion de l'organisme conformément à une description de poste détaillée.

Entrée en fonctions

Le candidat aura un an pour se familiariser avec ses fonctions, à compter du 1^{er} janvier 1990. Entrée en fonctions normale le 1^{er} janvier 1991. La sélection sera faite à la réunion du conseil d'administration du CDSPI d'août 1989.

Veuillez faire parvenir votre candidature par écrit au plus tard le 15 mai 1989, accompagnée d'un curriculum vitae détaillé, à l'adresse suivante:

Comité de sélection du Comité de gestion
CDSPI
2, square Lansing
Bureau 600
Willowdale, Ontario
M2J 4Z3

Discrétion assurée.

Practice Prosperity 1989

by Claudia Anderson, RDH

Part Three: Philosophy and Mission

In old style practices, the source of influence was the power of the traditional value system. Most dentists and the staff accepted their separate roles as did patients who came to the practice for treatment. From the late 40's to today, our traditional value system has been impacted by significant changes in society. Personal values have changed to include not only the traditional but every other point of view. In between the structured "work" ethic of the traditionalist and the leisure ethic of the "right now" challengers, we find today's dental team. On one hand accepting the theory of participative management and team building, and on the other hand searching for their own bottom line of self fulfillment. Let's face it. Since a lot of us question the future, loyalty to self often becomes more important than loyalty to the practice.

When interviewing employees we hear this conflict in their comments:

"Sometimes I feel my dentist employer has forgotten how to think for himself. Every time he gets a new idea, or takes a course, we suffer through the fall-out. I really like him and our patients. However, sometimes I think I continue to work here because I need the money, not because I understand what's going on".

This statement is a result of a breakdown in communications. Today, auxiliaries and patients demand access to information that was once available only to the dentist. Without constant clarification and communication, the basic principles that knit the practice together get lost in an overwhelming volume of information being acted on too quickly.

To develop a philosophy which is meaningful to everyone in the practice is a process which resembles a funnel. An enormous and unmanageable amount of information introduced through the top is controlled through a series of filters to produce an understandable stream of information at the bottom. The filters applied are these questions that need to be clarified."

"What do we believe?" –
Philosophy"

"Why are we here?" – Mission

"Where am I going?" – Goals

"How Am I Doing?" – Feedback

"What's in it for me?" – Rewards

"What happens when I need help?"

– Support

Philosophy – "What Do We Believe?"

Philosophy is a result of values and choices. For example, if the team is working hard to meet agreed upon production goals, but some people feel tired and in need of some quality time, we have a problem. Do we meet our immediate needs and take a break or operate by our philosophy and continue to work towards practice goals.

How we buy into the practice philosophy is based on how well our needs are being met in other areas. If a shared belief system is in place, it is plausible that the team will keep pushing for results. But since we do not live by values alone, people will only postpone immediate needs if long term values are being satisfied. Marketing more dentistry to increase practice profitability will only make sense if team members believe it is the right way to go because the more successful the practice is, the more successful they will be.

Mission – "Why Are We Here?"

A practice's mission is its "reason for being". The first step to using the influence of mission to focus team efforts is to define it. A simple exercise to get started would be to use a large sheet of paper covered in circles onto which team members would write a response to "why we are here". Answers may include "to provide quality care", "to educate and inform", and "to be profitable". From this beginning, a mission statement based on shared philosophy can develop.

Goals: "Where Am I Going?"

Setting goals is something that everyone knows they should do but sharing these goals with other team members is rarely accomplished. The latter is important because people with the best intentions

and clearest of goals still have trouble staying on track.

If we share "where I am going" with others, our goals become a statement of our individual mission. With understanding and acceptance of individual goals, team members have a better chance of making a true commitment to the practice mission because life goals become aligned with practice mission.

Feedback: "How Am I Doing?"

Feedback has been called the "breakfast of champions". It is indeed a powerful tool for helping people focus. Feedback should be frequent (don't wait until salary negotiations to tell someone how they are doing), accurate, usable and neutral. Feedback can be verbal or non-verbal. Charts or graphs on the numbers of new patients, recalls, or new treatment starts provide an effective method of self-feedback. Hand-written notes, a pat on the back or affirming nod also work very well.

Rewards: "What's In It For Me?"

A critical factor in establishing practice prosperity is how much, how frequently and how fairly employees are rewarded for good performance. Rewards can be both tangible (economic) and intangible (social). Rewards in the form of incentive packages are the icing on a cake baked with integrated goals and common purpose.

Support: "What Happens When I Need Help?"

Congruency and support create a climate of trust in which requests for help are reinforced. Self-motivated team members become involved in solving the problems of the practice because they take ownership. When a team member says "this practice is as much my responsibility as anyone else's, the journey through the funnel has been successful. Δ

Claudia Anderson is President of Anderson Programs Inc., Vancouver, B.C. She graduated from the University of Manitoba in 1965 with an R.D.H. and is presently a masters candidate in educational psychology. Claudia lectures part-time at the University of British Columbia, Faculty of Dentistry. Anderson Programs Inc., is a consulting company that works with dentists in the areas of strategic planning and practice management.

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L'hyperthermie maligne

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One copy of the above package of articles is available for \$5.00 to all CDA members and for \$10.00 to non-members.

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As a convenience to all CDA members in the various time zones in Canada, it is now possible to call the CDA Library, between 4:30 pm and 8:30 am Ottawa time, in addition to during regular library hours (8:30-4:30 EST)

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ENDODONTIC PRACTICE 11TH EDITION

Grossman, Oliet, and del Rio

1988, Lea & Febiger, Philadelphia
371 pages, \$42.50 US

The appearance of the 11th edition of this well-known text is testimony to its enduring usefulness in the field of endodontics. Its popularity is no doubt due in large part to the breadth of its scope. The text is divided into 19 chapters which deal succinctly with virtually every facet of endodontics. This newest edition is marked by the collaboration of two familiar names in endodontic teaching: Dr. Seymour Oliet and Dr. Carlos del Rio. In addition two useful appendices have been added; they deal with single visit endodontics and a revised radiographic technique for endodontics.

The strength of this book lies in its comprehensive exposition of the basic principles and objectives of endodontic treatment. Although a generalized updating of the text has been made to keep track of recent developments, the attempt is somewhat uneven and cursory. Several important omissions come to mind. For instance in the chapter on canal preparation, a review of various studies comparing canal preparation methods is lacking. No mention is made of the relative efficacy of the standardized, step-back sonic and ultrasonic techniques. For that matter neither is the "crown-down" technique mentioned nor are such innovations as the new files with modified tips or the Canal Finder System. Elsewhere in the text no reference can be found to the usefulness of prophylactic antibiotics in the prevention of endodontic flare-ups in selected cases. This has been an area of considerable research in recent years with interesting findings. The chapter on surgery fails to discuss important anatomical considerations of the location of the mandibular canal and mental foramen relative to the apices of the mandibular posterior teeth. The chapter on traumatized teeth is extremely brief with barely a few sentences on luxated teeth and their treatment.

The observant reader will also notice that obsolete concepts which have fallen out of favor in current endodontics, occasionally surface here. For example, in the chapter on diagnosis, the authors advo-

cate the use of the intraligament injection as a means of selective diagnosis of pulpal pain. Studies by Walton and others have consistently shown this technique to be unreliable because of its anesthetic effects on neighboring teeth. Elsewhere in the chapter on surgery, photographs of surgical technique show antiquated flap designs such as the semilunar flap and a trapezoidal flap which fails to extend at least one tooth lateral to the tooth in question on either side. References to the use of silicate cements in the section on bleaching are outdated. Similarly the section on endodontic implants could have been omitted because of the increasingly limited place of this procedure in modern practice.

Editing errors occur occasionally: dentinocemental junction is confused with dentinocemental junction (page 260) and gold inlay is used instead of gold onlay (page 265). In addition the photographs are entirely in black and white and frequently have poor definition, especially in the chapter on surgery. Radiographs are often over-exposed or under-exposed.

A favorable feature is a concise yet thorough section on the endo — perio relationship. In addition there is a comprehensive chapter on pulpal anatomy replete with informative diagrams of teeth sectioned at various levels.

In summary this book is of considerable usefulness for dental students and new graduates. It is, however, of limited value for experienced practitioners wishing to expand their endodontic horizons.

This book was reviewed by:
Dr. Jack Roskies
Endodontist,
Ottawa, Ontario

COMPLICATIONS OF SEDATION AND ANESTHESIA IN DENTISTRY

Allen, G.B. and Hayden, J.

1988. P.S.G. Publishing Company Inc.,
Littleton, Mass.
368 pages, \$30.00 US

This appears to be the initial edition of a 360 page soft cover book which has been published, as the authors state in the Preface, "to fill the need of a comprehensive overview of the problems that have arisen" in the course of dental patient

treatment with sedation and anesthetic procedures. This book begins with a Preface followed by nine chapters. These chapters are entitled Introduction, Pre-operative Procedures, Facilities, Anesthetic and Sedative Techniques, Drugs, Pathophysiology, Postoperative Complications, Emergency Care and Miscellaneous Complications. These nine chapters represent "general areas" wherein complications may arise. Each chapter is further subdivided into a number of sections. For example, the chapter entitled Postoperative Complications is divided into sections on Transport to the Recovery Room, Recovery and Minor Complications, which more specifically describe the situation under which the mortality or morbidity has occurred.

Each individual topic is introduced with some background information followed by case reports. Frequently more than one case report is used to illustrate a particular situation. In all, a rather exhaustive search was made and a total of 376 case reports are illustrated. The authors infer that the number of actual cases is significantly greater, however. The authors also correctly point out that some details of these case reports have been omitted to apparently maintain confidentiality. Despite these omissions, some of these case histories are almost unbelievable or even bizarre. While some are lacking in essential detail, others document cardiac dysrhythmias which have been timed to the exact second! One case describes how Diazepam 10 mg., Innovar 3 ml, Fentanyl 100 mg, Methohexital 520 mg, Pentobarbital (400 mg), Benadryl 900 mg, etc. etc. were administered in one appointment to a 13 year old patient who subsequently died!

Following description of each case history there is a section in which the authors comment on the management of the case. These comments are not always accurate and complete. Although the initial remarks, comments and case histories are referenced, many references are out of date. The essential items to be gleaned from each case are summarized in a useful "Epitome" at the end of each section. This book also contains a good Index, and finally, a Glossary of terms.

This book really has much to offer. However I found it to have some annoying properties. In addition to typographical,

grammatical errors, and errors in sentence structure, I feel it was presented in a rather dogmatic fashion. Many points in the "comments" section deserved to be referenced rather than just stated. As well, I feel many of the points could have been made in a more concise manner. Reference to nitrous oxide as "laughing gas", and Canada as a province, is inexcusable!

This book probably deserves to be read by anyone administering sedation, local anaesthesia or general anaesthesia to dental patients. It makes for interesting reading, and if nothing else, would spark some lively discussion.

This book was reviewed by:
Earle R. Young, BSc, DDS, BScD, MSc,
FADSA,
Asst. Professor of Anaesthesia
Faculty of Dentistry
University of Toronto.

*Dept. of Anaesthesia
The Wellesley Hospital
Toronto.*

PERSPECTIVES IN DENTAL CERAMICS: PROCEEDINGS OF THE FOURTH INTERNATIONAL SYMPOSIUM ON CERAMICS

Edited by Jack D. Preston, DDS, FADC, FICD

1988, Quintessence Publishing Co., Inc.,
Chicago
472 pages

This textbook is really a collection of articles based on presentations made on topics related to dental ceramics at the fourth International Symposium on dental ceramics in 1985. The author has cleverly divided the text into four sections: materials, esthetics, fabrication and communication. Each section contains a series of articles by contributing authors. In total there are forty-seven articles each being presented by a different author(s).

The materials section consists of 14 articles dealing with such topics as low fusing porcelains, porcelain-alloy compatibility, optimizing strength of aluminous porcelain, new all ceramic crown materials and stress distribution in atypical crown designs. Bertolotti presents an excellent article on rational selection of casting alloys. The materials section, as one would expect, is quite "research" oriented and requires somewhat more than a basic understanding of dental materials. Some of the articles in this sec-

tion are very detailed and narrow in scope and may not be of interest to everyone.

The esthetics section has 14 articles with one general theme, how to make a ceramic restoration look as natural as possible. Several different methods of diagnosing and treating the problem of esthetics are presented. Different approaches to shade determination are also presented. Topics covered in this section include shade determination, custom shade guides, proper light sources, framework design, texture, lustre, translucency and fluorescence. This section is very detailed and informative. There are several different views on the problem of esthetics. As a result it may appear the articles are becoming redundant, but a closer look makes us realize there is a slightly different slant to each one. There are certainly many good tips for the ceramist and dentist interested in maximizing esthetics.

The section on fabrication contains 13 articles dealing with the fabrication of everything from metal ceramic crowns to all ceramic crowns including castable glass and hydroxyapatite systems. Non-cast metal ceramic crowns, etched cast restorations and ceramic veneers are examined. This section provides a good overview of the latest in dental ceramic technology which should be of interest to most people involved in dentistry and would provide an excellent source of information to the general dentist and undergraduate dental student interested in modern dental ceramic technology.

The final section, containing six articles, deals with communication problems that can occur between the dentist and dental technologist. Different approaches to the problem are examined. The importance of proper interocclusal records is emphasized. Contouring of porcelain for crowns and pontics is reviewed and the importance of soft tissues control is examined from the point of view of the periodontist, prosthodontist and dental technician.

This textbook covers the topic of "dental ceramics" in great detail. Most articles are very well written and illustrated. The book contains many good diagrams and color photographs that are of superb quality. Each article is followed by a list of references which can provide an excellent source for research. I would suggest this textbook is more suited to the prosthodontist, graduate students in restorative dentistry, dental researchers and general dentists with more than an aver-

age interest in dental ceramics. It certainly would be a top resource textbook for anyone interested in dental ceramics and provides the latest in developments in this ever changing aspect of dentistry.

This book was reviewed by:
M. Gorman Doyle, DDS, Cert. Pros.
Department of Restorative Dentistry
Dalhousie University

DISEASES OF THE TONGUE

**Isaac van der Waal and
Jens Pindborg**

Quintessence Publishing Co.,
199 pages with illustrations
\$58.00

This textbook documents the important role of the tongue in reflecting a wide spectrum of patient health. The book is written by two internationally known authors who are qualified in the fields of Oral Pathology and Oral Medicine. Their combined experiences have produced a text to achieve their objectives to aid the clinician in making correct and early diagnoses of lingual conditions.

The text covers anatomy, histology, embryology and physiology of the tongue, congenital and developmental disorders, a broad spectrum of local and systemic benign diseases involving the tongue, neurological disturbances, and malignant neoplastic processes.

The coverage is quite complete for a text of this size, and organized in a manner that is easy for a clinician to read or use as a reference. While some viral and immunologic-associated lesions are not covered, I'm sure this will be rectified in future editions. The text is clear and comprehensive and is as updated as any text trying to cover this amount of material. The reference citations are also adequate. An outstanding feature of the book in addition to the organization and coverage of conditions is the superb selection and quality of illustrations.

In summary, this text is very well written and will serve as a very important supplement to the dental practitioner regarding assessment and management approaches to signs and symptoms involving the tongue. Δ

This book was reviewed by:
Dr. Sol Silverman
Division of Oral Medicine
School of Dentistry
University of California, San Francisco



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to see the dentist every time
you receive dental treatment.

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to know in advance the type and
expected cost of treatment.

YOU HAVE A RIGHT

to expect dental team members to
use appropriate infection controls,
such as gloves.

YOU HAVE A RIGHT

to ask about treatment alternatives
and be told, in language you can
understand, the advantages and
disadvantages of each.

YOU HAVE A RIGHT

to know the education and training
of your dentist and the dental team.

YOU HAVE A RIGHT

to know what professional rules,
laws and ethics apply to your dentist
and the dental team.

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Editor's Note: In this issue of the Journal, Dr. Arthur Schafer discusses the patient's "right to know". In keeping with this theme the Journal is pleased to reprint, with the kind permission of the California Dental Association, its version of the "Dental Patient Bill of Rights".

California's "Patient Bill of Rights", as part of a massive dental awareness campaign, has attracted worldwide attention. More than 50 U.S. states and 12 foreign countries have requested copies of the material.

Part II

DENTAL ETHICS: GETTING THE BALANCE RIGHT

*By Professor Arthur Schafer,
Director, Centre for Professional and Applied Ethics,
University of Manitoba; Head, Section of Bio-medical Ethics,
Faculty of Medicine, University of Manitoba.*

Editor's Note: Times are changing! And so are the "rules of the game" in dentistry!

Last month Professor Arthur Schafer, in the first of a three-part series, presented his views on "What Ethics Is Not". In this issue "Getting the Balance Right" deals directly with Codes of Ethics and the profession's obligations.

The opinions within these articles are Professor Schafer's and not necessarily in agreement with opinions, policies and guidelines of the Canadian Dental Association, any of the Corporate Bodies or Licensing Authorities.

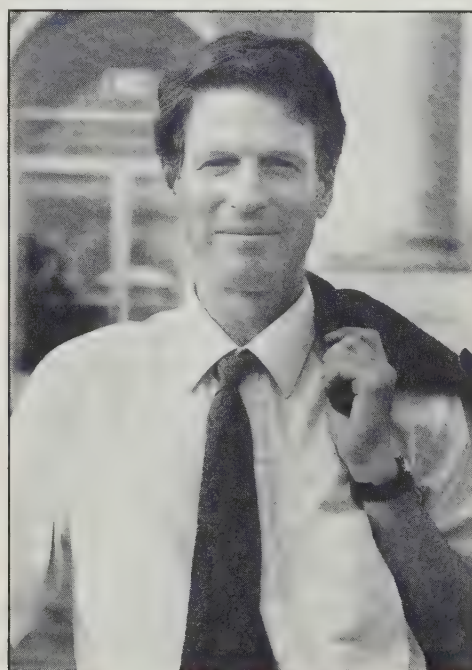
The Journal invites reader's interest and input. Please send your comments to the Editor promptly. As space permits, the comments will appear in future Journal issues. All letters will be forwarded to the Council on Ethics for deliberation and consideration.

Is Dental Ethics changing? Is Dental Ethics different today from what it was a generation ago?

Almost certainly the ethical norms of the dental profession have changed over the past two or three decades and they are still in a process of transition. Ethical codes of dentistry and of the other health professions have evolved in response to many deep-seated cultural developments, such as the rise of the consumer rights movement, the feminist movement, the widespread scepticism about authority, the ever-increasing emphasis on individual liberty of choice, and autonomy, the desire of persons to control their own lives and be masters of their own destiny. These important cultural developments have inevitably undermined the paternalistic traditions of medicine and dentistry.

"Doctor's Orders", was a phrase I heard in my youth. It used to be the case that these words made even the strongest man quake and submit. Things have changed however, and patient compliance is far from automatic. Many patients want to know *why* the doctor is ordering this test or that treatment, or why the

dentist is recommending a particular procedure. Many patients want to know what the alternatives are and the risks and benefits attached to each alternative.



Professor Arthur Schafer

Moreover, dental patients may show a lively interest in the comparative cost of alternative treatment plans.

In response to this shift in social attitudes and values the prevailing norms of the dental profession have, over the last decade or two, shifted gradually from a dentist-centred ethic to one which is a more patient-centred; from paternalism to consumerism. It is now widely recognized amongst dentists and incorporated within some dental codes of ethics, that the practitioner has the duty to inform the patient of alternative treatment options, including the cost of each option. The patient then has the right to consent or refuse any of the proposed treatment plans. Codes of dental ethics have been modified in recent years to reflect these societal shifts of attitude and value, but there are cynics who question whether it really makes a difference in the real world what the Code of Ethics of the Canadian Dental Association may, or may not, say.

In answering this question, we should, from the outset, acknowledge that no code of ethics, however idealistic, will transform an unethical dentist into an ethically conscientious dentist. One can-

not teach ethics to an adult person and expect that the person will, ipso facto, become ethical. There is no serum to inoculate against unscrupulous behaviour. This should not, however, make us entirely sceptical about the utility of having a code of ethics which presents to the profession and to the public alike a model towards which every professional should aspire.

Teaching dental ethics to students and also as part of continuing education to the practitioners, will not magically transform anyone's character, but it could assist students and dentists alike to become more self-critical and more sensitive to the ethical traditions of dentistry.

Our community has conferred upon professionals in general, and dentists in particular, a high degree of professional autonomy. We recognize both the community's vital interest in health care and its limited ability to make fully informed decisions. Society simply does not have the knowledge which would enable it to control and police effectively the dental profession or the medical profession. In the light of this recognition what society has done is to reach a kind of bargain with each professional group, a trade-off so to speak.

The community has said to the dental profession, "We will let you, as a profession, decide what qualifications and what competence is necessary for certification and licence to practice dentistry. We will let you set the norms for your profession. We will let you determine when someone should be decertified, or otherwise disciplined. We will confer these powers upon you because we want you to practice your profession in a way that will effectively benefit the community by delivering first rate dental care to your patients."

Having conferred this autonomy upon the professions, the community demands as a quid pro quo that the profession accept the moral responsibility of developing and maintaining increasingly high standards of competence. The community expects the profession to police its members for incompetent and unethical conduct in such a way that dental professionals "blow the whistle" on their colleagues who behave incompetently, unethically or illegally.

There are critics of the dental profession who argue that if dentists want to maintain and preserve the professional independence they now enjoy, they are going to have to do a much better job of living up to their obligation to protect the community against incompetent and unethical practices.

The Canadian dental community may wish to reconsider some aspects of its own Code of Ethics. The dental profession may be the only health profession in Canada which does *not* commit its members to an *over-riding* duty of service to the public. For example, physicians, nurses and psychiatrists, all have as their first principle of professional ethics, that the well-being of patients will be their first, their highest, their over-riding priority.

By contrast, the first Article of the Canadian Dental Association Code of Ethics says, "The dentist is a member of the health profession and has a duty of service to the public". Notice, no mention is made of the priority of this duty. When this duty conflicts with self interest or the business of the dentist, no guidance is given as to whether there is an obligation on the practitioner to place the interests of the patient or public first.

A second example of what to some may be an inadequacy of the Canadian Dental Association Code of Ethics appears under the broad heading of "Responsibilities to the Profession". In Article II, headed "Criticism", the CDA Code of Ethics declares that "dentists should refrain from making any disparaging comments to patients or the public about the qualifications or the procedures of a colleague". Rather, it says, "... such criticisms should be directed to the appropriate dental professional body". Is this good enough?

Does the dental profession not have an obligation to alert patients who may have been victimized by incompetent or unethical conduct? The public is vulnerable and is very often not in a position to judge whether incompetent or unethical practice has occurred. Thus, the public requires a dentist to accept a professional obligation to take action to protect it against the incompetent or unscrupulous practitioner.

Of course, it would be unprofessional for a dentist to assume that unsuccessful dental work is necessarily the product of a colleague's incompetent or unethical practice. There may be many possible explanations for failed treatment! But is it not the obligation of a dentist, when unsuccessful work is encountered, at least to make inquiries of the dentist who performed the work and to question the nature and the circumstances of the treatment? If these inquiries produce information that suggests something inappropriate occurred, is there not an ethical obligation on the part of the dentist who has discovered this inappropriate work to inform the patient that he/she can seek

economic and other redress?

Why would the Code of Ethics of the Canadian Dental Association prohibit a dentist from informing a patient of inadequate dental work that needs to be replaced or repaired? If dentists refuse, *in any circumstances*, to alert a patient who may have been victimized by the conduct of a colleague, does this not violate the patient's right to pursue proper redress?

How could it be ethically appropriate for the dental profession not to provide the patient with information so that they may, if they wish, seek a lawyer to gain redress for mistreatment? Are patients not entitled, when they have suffered unnecessary discomfort, pain, suffering or economic loss, to be properly compensated?

In the July (1988) issue of the *Journal of the American Dental Association* an orthodontist, Dr. Thomas Tanner, related how he handled an ethically troubling case. He had received a referral from a dentist requesting resolution of a sixteen year old's orthodontic case that had not responded to over two years of treatment. Dr. Tanner wrote in his letter to the *ADA Journal*, "I was dumfounded by the tremendous lack of sound treatment results". Upon contacting the referring dentists, Dr. Tanner was informed by his colleague that he had been "snowed" and "stumped" by the case (yet continued to treat it for over two years!).

In order to prevent a lawsuit against his colleague, to "uphold the honour of the profession", and to keep "the respect of my contemporaries", Dr. Tanner proudly described how he deliberately misled the mother of the patient and the patient himself. Dr. Tanner declared that he had behaved consistently with the Golden Rule; "do unto others as you would have others do unto you".

In the September (1988) issue of the *Journal of the American Dental Association* another dentist, Dr. J. Schulman, pointed out that Dr. Tanner's interpretation of the Golden Rule would mean that every dentist should cover up for every other. Significantly, Dr. Tanner does not ask himself: if he were a patient who had been mistreated would he want to be misled by other dentists? Members of the general public may also wish to ask: why should the moral rule apply to one's colleagues, if one is a dentist, but not to one's patients?

The fundamental contract between the community and the dental profession requires that the dental profession be willing to police its members in a much more forthright way. The profession must

be willing to "blow the whistle" on those dentists who refuse to report their own mistakes to patients. A balance must be struck between respect for colleagues and proper scientific caution. Professionals have an obligation to inform a person who has been wrongfully harmed or injured so that the wronged patient can seek proper legal redress and compensation.

Because so many Canadians lack full dental insurance, Canadian dentists may infrequently experience a conflict between their interests as business people and their commitments as health professionals. It is difficult to imagine, for example, that a patient who is suffering from a malignant tumour would say to her physician, "Please remove \$425.00 worth, I may have the rest taken out later when I can afford it." As a result of Medicare, every Canadian is guaranteed access to the best medical treatment available. Surprisingly this is not yet the case with dentistry. Too often a needed dental treatment is not available to Canadians

of limited income.

The dentist in Canada is always wearing two hats: the hat of the business person, and the hat of the health professional. Therefore, the commitment of the dentist to serve the health needs of his or her patients will sometimes clash with the dentist's perceived need to manage a practice efficiently and profitably.

It goes without saying that the dentist who follows bad business practices will be driven out of business altogether, to the detriment of the individual dentist, but also to the detriment of the community. On the other hand, there seems to be a widespread perception in our society that dentists wear their business hats more often than they wear their health profession hats. If this perception corresponds to reality, then the reality should be changed.

The moral point of view requires of a dentist that she/he set aside considerations of self-interest and profit, and ask, "From the point of view of an impartial

spectator, which of the alternatives is likely to produce the best result for everyone involved?"

The ethical point of view does not require that the dentist ignore his or her self-interest, but it does require that the dentist's self-interest not be allowed to override the interest of patients, colleagues, and the larger community.

As one reads through the principles of the Code of Ethics of the Canadian Dental Association it is difficult to avoid the conclusion that the dental profession may not have struck the right balance between its self-interest, financial interest and interest as an association of business people, on the one hand, and its interest as health professionals committed to the health and well-being of patients, on the other. Δ

(Next Month: Dental Ethics: Challenge and Crisis)

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THE ROLE OF DENTISTRY

in head and neck radiation therapy

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Toronto

ABSTRACT

In the adult patient, oral complications of cancer radiotherapy stem from the deleterious effects of radiation on salivary glands, oral mucosa, mandibular musculature and alveolar bone.¹ Clinical consequences of such treatment include xerostomia, rampant dental decay, mucositis, taste loss, osteoradionecrosis, infection, trismus, and nutritional stomatitis.¹⁻³

These alterations to the normal state occur both during and after completion of head and neck radiation. Fig. 1 outlines the time frame involved in the development of each particular problem. In the past 20 years, many changes have occurred in the management of patients receiving radiation therapy. The traditional regimen of dental care in these patients was one of extracting all teeth encompassed by the radiation field.⁴ However, 15 years ago, this concept was questioned due to the incidence of post radiation caries (PRC) outside the zone of irradiation^{4,5} (Fig. 2).

The purpose of this paper is to review the major consequences of radiation treatment to the head and neck as well as outline the role of the dentist in the management of these patients.

SOMMAIRE

Chez les adultes atteints du cancer, les complications buccales de la radiothérapie proviennent des effets nocifs des

radiations sur les glandes salivaires, la muqueuse buccale, la musculature mandibulaire et l'os alvéolaire¹. Les conséquences cliniques de ces traitements comprennent la xérostomie, la carie florissante, l'inflammation des muqueuses, la perte du goût, l'ostéoradionécrose, des infections, le trismus et la stomatite nutritionnelle¹⁻³.

Ces modifications à l'état normal se produisent pendant et après l'irradiation de la tête et du cou. Le tableau 1 indique le temps nécessaire pour que chaque problème se développe. Au cours des 20 dernières années, on a apporté de nombreux changements dans la gestion des patients soumis à des radiothérapies. On avait l'habitude de leur extraire toutes les dents qui étaient touchées par les radiations⁴. Toutefois, il y a 15 ans, on a remis en question cette idée à cause de l'incidence, en dehors de la zone irradiée, des caries après irradiation (4-5; tableau 2).

Dans cet article, on se propose de revoir les principales conséquences des radiothérapies de la tête et du cou et de souligner le rôle du dentiste dans la gestion de ces patients.

Xerostomia

Salivary secretion declines drastically after 1000 cGy when all major salivary glands are included in the radiation field and remains as such with dosages from 5000 cGy and up.⁶⁻⁸ This reduction is related to total dose, increased daily fractionation (> 200cGy per day) and

duration of therapy.^{9,10} However, when portions of the major salivary glands are spared due to radiation beam placement, then residual function continues.^{8,11,12}

When salivary glands are irradiated, acinar cells are destroyed and replaced by ductal remnants and loose connective tissue, with a net loss of secretory cells. Subsequent infiltration by lymphocytes and plasma cells is another common finding¹ (Fig. 3). Irradiation of the parotid glands in particular results in initial destruction of mucous cells, followed by degeneration of serous cells.¹¹ Other glands experience initial damage to mucin-engorged cells and mucin release. Eventually, total destruction prevails although occasional regeneration of mucous producing cells may occur.¹¹⁻¹³ Although many authors state that the greatest damage occurs in acinar cells, some suggest the damage may not be to acinar cells but to the connective tissue, with an indirect, late effect on acinar cells.^{12,14} Another possibility is that xerostomia may be caused by irreversible damage to the blood supply and cellular components of the glands.^{12,14}

Post radiotherapy xerostomia has a rapid onset and is irreversible if all major glands are totally irradiated with doses in excess of 6000 cGy^{1,6,8,11} (Fig. 4). Although subjective improvements are noted by some patients with the passage of time, objective analyses do not bear this out.¹ However, if the radiation beam spares some gland tissue then function remains.^{6,8,11,12,14} Salivary flow rate drops 57 per cent after the first week of

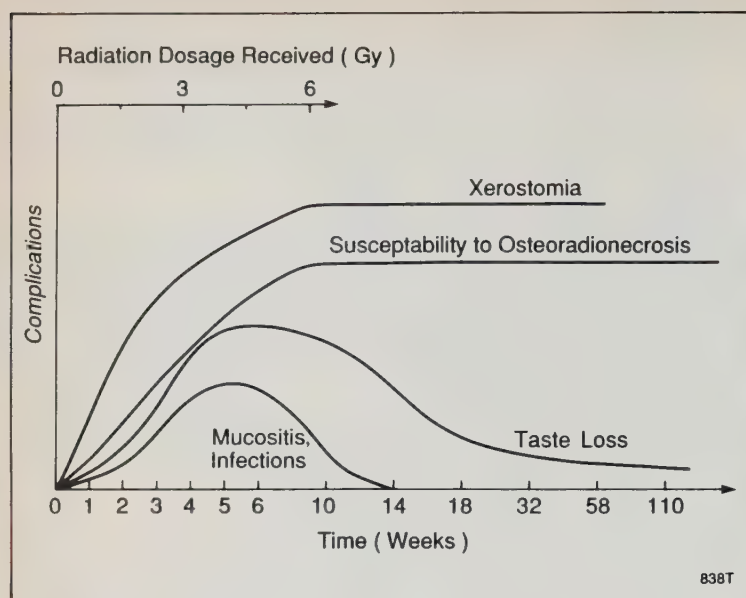


Fig. 1. Schematic diagram illustrating time of onset and duration of radiation-induced side effects.



Fig. 2. Clinical photograph illustrating the predominant cervical orientation of post-radiation caries.

treatment, 76 per cent after six weeks of treatment, and 95 per cent at three years post radiation.¹ Severe xerostomia is most pronounced when opposing radiation fields are used to treat tumours of the naso/oro pharynx, and the major glands are entirely irradiated with the aforementioned high doses.^{6-8,11}

In normal saliva, cariogenesis is diminished by salivary antimicrobial substances including lysozyme, lactoperoxidase, lactoferrin and immunoglobulins.¹⁵ With

radiation-induced xerostomia, highly cariogenic microflora replace non-cariogenic flora and a decrease in caries-protective salivary electrolytes and immunoproteins occurs.^{1,12}

The loss of protective salivary pellicle results in plaque mediated diseases (dental caries and periodontal disease).¹⁶ In addition, the cancer patient is often placed on a high carbohydrate diet to maintain adequate caloric intake. These events render the patient highly suscep-

tible to PRC.¹

The treatment of xerostomia is palliative and consists of using saliva substitutes, sialogogues and maintaining optimal oral hygiene.¹ Currently available commercial saliva substitutes include Moi-Stir[®]*, Saliment[®]**, Artisial[®]*** and Xerolube[®]†. These contain combinations of sorbitol, carboxymethylcellulose or mucin, and electrolytes in an aqueous or saline base. Comparisons of different saliva substitutes have found little correlation between viscosity of the substitute and its lubricating ability.¹⁷ Mucin-based as opposed to carboxymethylcellulose-based saliva substitutes may offer better protection against tooth destruction and be distributed more evenly over dental tissues.^{16,17}

Calcium, phosphate and fluoride are added to provide remineralization while re-hardening is dependent on concentrations of carboxymethylcellulose, mucin, and sorbitol.¹⁶ A formulation for a typical saliva substitute is included in Table I.

The next generation of saliva substitutes will have to include finite characterization of relative functional domains. Composite salivary molecules should be incorporated that have greater substantivity, bio-compatibility, targeting for intra oral sites, and a design for each patient's individual needs.¹⁶

TABLE I

Formulation for topical saliva substitute

Artificial Saliva

Ingredients

1)	Potassium chloride	2.50 g
2)	Sodium chloride	3.46 g
3)	Magnesium chloride	0.24 g
4)	Calcium chloride	0.67 g
5)	Dipotassium orthophosphate	3.31 g
6)	Potassium dihydrogen orthophosphate	1.30 g
7)	Methylparabens	8.00 g
8)	Flavouring extract	10.00 ml.
9)	70% Sorbitol	171.00 g
10)	Sodium carboxymethylcellulose	40.00 ml.
11)	Sodium fluoride	17.50 mg.
12)	Water(de-ionized) qs ad.	4000.00 ml.

Equipment

- 4000 ml. beaker
- Mettler top loading balance
- Magnetic stirring rod
- Hot plate

Procedure

- Boil about 3000 ml. de-ionized water and add 1, 2, 3, 4, 5, 6, 7, and 11
- Add 10, slowly, mixing well and allow to cool then refrigerate
- Add 8 and 9 and QS to 4000 ml. de-ionized water
- Package in 4000 ml. amber bottle.

* Moi-Stir, Kingswood Canada Inc., Scarborough, Ont.

** Saliment, Richmond Pharmaceuticals Inc., Toronto, Ont.

*** Artisial, Jouveinal Laboratories Inc., Montreal, P.Q.

† Xerolube, Sherer Laboratories, Dallas, Texas, USA

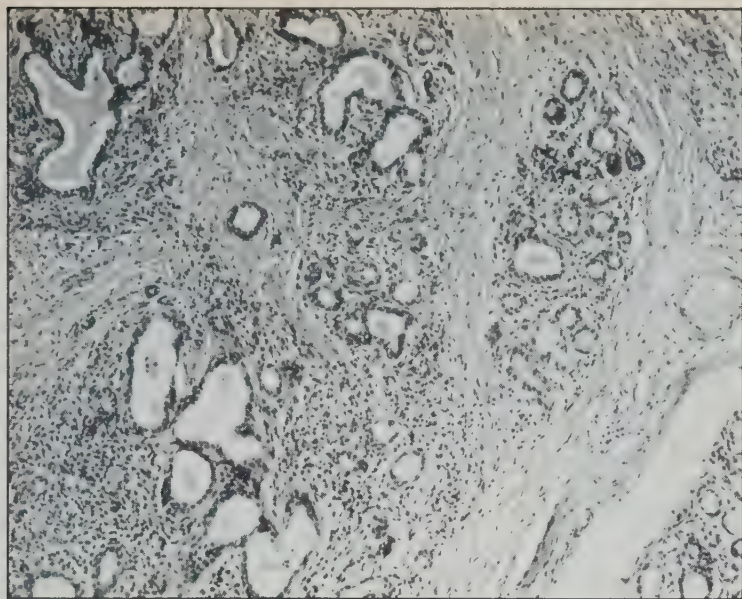


Fig. 3. Low-power photomicrograph ($\times 25$) illustrating ductal remnants, loose connective tissue and chronic inflammatory cells typically present in salivary glands which have been irradiated (Hematoxylin and eosin stain).

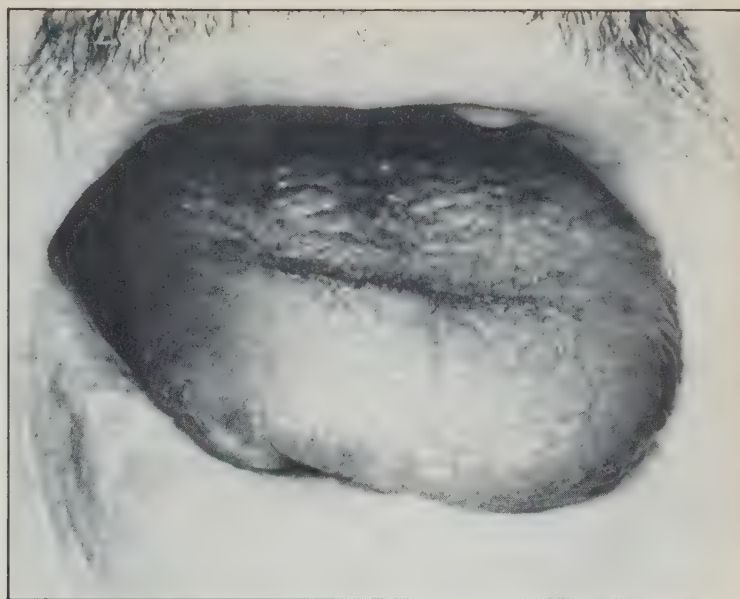


Fig. 4. Clinical photograph illustrating post-radiation xerostomia. Note fissuring of tongue, and general dry appearance.

Sialogogues, on the other hand are medications that stimulate residual or minimally affected salivary tissues to increase synthesis and secretion.^{16,18} Pilocarpine and antholetrithione have been used separately or in combination to increase salivary synthesis and secretion.^{12,18} However, success has been dependent on major glands retaining some functional acinar cells after irradiation. Epstein and Schubert¹² claimed that specific drugs used in combination and in patients where all glands were irradiated, increased salivary flow. However, to draw adequate conclusions, the patient population studied was too small, and radiation dosages ranged below accepted thresholds.¹²

Mucositis

Mucosal erythema usually develops within one week of a 200 cGy per day course of radiation.¹⁰ At two weeks,

radiation-induced mucositis presents as an increasing white coloration of the oral mucosa and is a consequence of slower desquamation and more complete maturation of oral epithelial cells^{10,19} (**Fig. 5**). As radiation treatment progresses, superficial cells are no longer replaced and at three weeks the mucosa becomes thin, red and friable. However, at daily dose rates of 170-180 cGy a maximal reaction of only patchy mucositis occurs.¹⁰ This is attributed to cell killing and repopulation being at an equilibrium at this lower level, while at a higher daily level (200 cGy), cell killing exceeds proliferative capacity of these same stem cells.¹⁰ Vascular dilatation and edema of the submucosa lead to further weakening and the mucosa ulcerates easily²⁰ (**Fig. 6**). As a result, during the period of radiation therapy, the ability to maintain oral hygiene and wear dentures is markedly reduced. In most situations, mucositis resolves in two to three weeks post radiation.¹⁰

Treatment of mucositis is symptomatic. Topical anesthetics are effective in reducing the discomfort for short periods of time, thus allowing the patient to eat.¹⁰ Recently, benzydamine hydrochloride mouth rinses have been used in the management of radiation-induced mucositis and conclusions suggest a reduction of both pain and use of systemic analgesics.²¹

After radiation, if ulceration is present, it may persist for extended periods and heal with fibrosis further compromising function.¹⁹ Ultimately, the soft tissue undergoes further fibrosis with a decreased blood supply, rendering it susceptible to recurrent ulceration and infection.¹ Fur-

thermore, once the healing has occurred, the atrophic mucosa does not withstand denture trauma well. Therefore, frequent adjustments and prostheses evaluation are required for all denture wearers.^{22,23}

Taste loss

Loss of taste and unpleasant taste (hypo-geusia) becomes pronounced at doses in excess of 3000 cGy or more.¹ The most severely affected taste sensations are salt and bitter and the least are sweet and sour.²⁴ It also appears that the higher the pretreatment taste acuity, the greater the taste loss during radiation.¹⁰ The loss of taste sensation is mediated by the action of radiation on lingual mucosa and is of clinical significance only in that patients may lose interest in eating and suffer from malnutrition and dehydration.¹ Recovery ranges from one to three months to life-long problems.²⁴

Infections

The most common infection in the oral cavity during radiation therapy is candidiasis. It has been suggested that cancer of the oropharynx does not increase the incidence of oral candidiasis.²⁵ However, the use of tumoricidal doses of radiation does increase candida by 30 per cent.^{25,26} An increase in culturable candida is particularly present in denture wearers and appears to be related to increased radiation dose and volume of parotid gland included in the radiation field.²⁶

Although an erythematous form of candida is recognized, the compounding of an erythematous radiation-induced mucositis allows only for easy identification of the more common pseudomembranous

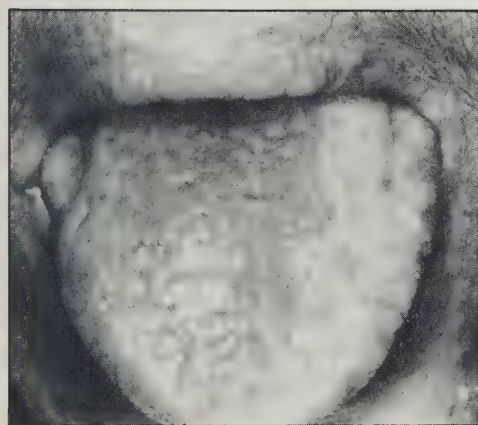


Fig. 5. Clinical photograph of initial stage of radiation-induced mucositis of the dorsal surface of the tongue.

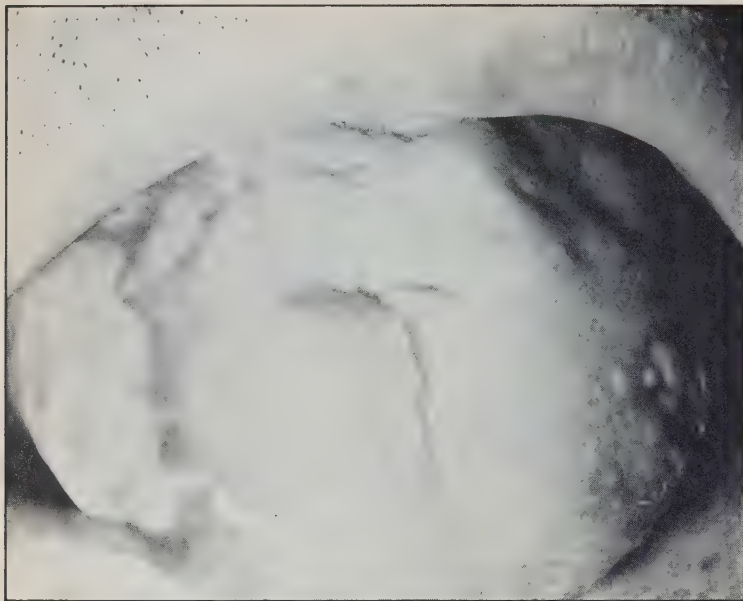


Fig. 6. Clinical photograph of advanced radiation-induced mucositis. Note large ulcer on lateral border of tongue.

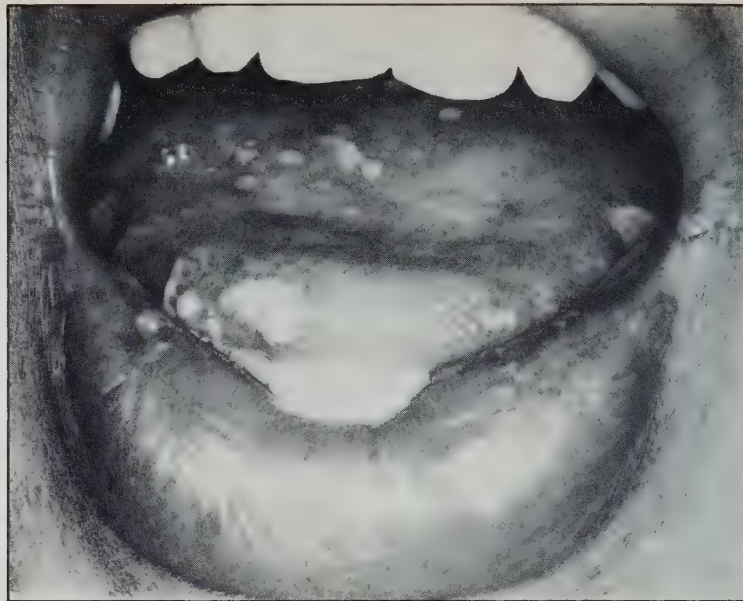


Fig. 7. Clinical photograph of radiation-induced candidiasis. Candidal plaques are seen on dorsal surface of the tongue extending onto the lower lip.

form and may mask symptoms of the usual candidal presentation of burning oral mucosa.

The pseudomembranous form presents clinically as white plaques in the radiation-treated patient (**Fig. 7**). Such plaques can be scraped off, leaving an erythematous base. Since the severity of oral mucositis does not appear to be influenced by the obliteration of oral candidal microorganisms, the prophylactic use of fungicide is not justified.²⁵

Should candida infections occur in denture wearers who are previous candidal carriers (as determined by culturing oral rinses) and if both parotids are completely irradiated with high doses, then prophylactic antifungal therapy may be warranted.²⁶ This consists of the use of Nystatin oral suspensions (100,000 units per ml) in one ml doses four times daily.

Trismus

Trismus of the oral musculature is thought to occur as a result of radiation-induced fibrosis of the affected muscle and may cause diminution of stomal size as well as altered chewing and speech patterns.¹

Post radiation caries

Prior to 1972, it was postulated that caries in radiation-treated patients was due to either direct effect of radiation on the teeth or as a consequence of xerostomia. The only significant effect on the teeth themselves is the destruction of interprismatic enamel, a circumstance which renders the teeth more susceptible to decay. Such enamel damage may result

at radiation doses in the region of 2000 cGy.¹⁹

Presently there are two possible causes of PRC, these being the lowering of oral pH, with modification of bacterial flora, or a change in enzymatic composition of saliva which degrades elementary sugar to pyruvic and lactic acids.²⁷ Microflora alteration involves the replacement of noncariogenic organisms with cariogenic ones such as *Streptococcus mutans* and *Lactobacilli*.²⁸ *Actinomyces naeslundii* is also increased, which may partially explain accelerated periodontal disease in some patients.²⁸ These microflora changes occur in an environment of lower salivary pH, and an increased intake of high carbohydrate foods by the cancer patient. Because of the diminished salivary flow, reduced fibre content in the patient's meals, and stagnation of food debris, destruction of dental hard tissue is potentiated in both irradiated and non-irradiated areas. Clinically evident radiation caries may develop within three to six months after completion of radiation treatment.²⁰

Osteoradionecrosis

A triad consisting of destruction of osteocyte, absence of osteoblasts and lack of new osteoid, in combination with regional blood vessels that are thickened and fibrosed and connective tissue replacement of bone marrow makes the mandible susceptible to a process of necrosis and infection, termed osteoradionecrosis.²⁹⁻³³

Microscopically, the loss of osteocyte only occurs in the direct path of the radiation beam in both the lacunae of the outer lamellar as well as the haversian bone.³⁴

The cellularity of the overlying periosteum is reduced as is its blood supply.³⁴ In the alveolar bone, periodontal fibres become hyalinized and principle-fibre organization is lost. The number and calibre of blood vessels decreases in the alveolar support bone and reduction in the number of cementoblasts and osteoblasts occurs in the periodontal tissue.^{32,34}

The incidence of osteoradionecrosis in irradiated jaws ranges from 4 per cent to 35 per cent.³⁰ Because of the occurrence of osteoradionecrosis in tooth-bearing areas in the past, all teeth in the radiation field were removed.²²

Conditions which predispose a patient to osteoradionecrosis are: inadequate post-extraction healing prior to commencement of radiotherapy, radiation of malignancies situated in close proximity to bone, high total doses of radiation (6500 cGy or higher), high daily dose rates (> 200 cGy per day), combinations of externally applied radiation with radioactive implants, poor oral hygiene, poor patient compliance, post radiotherapy surgical procedures, trauma to irradiated bone and nutritional factors.^{32,33,35} Edentulous patients seem to be at less risk of developing osteoradionecrosis.^{20,32,33,35} Seemingly trivial trauma, such as denture irritation, may lead to the development of osteoradionecrosis. Initially a small area of bone exposure with heaped up surrounding mucosa appears (**Fig. 8**), which if left unchecked progresses to uncover a large section of the mandible (**Fig. 9**).

The role of the dentist

The prevention of osteoradionecrosis has been the driving force behind the imple-



Fig. 8. Clinical photograph of bone exposure in patient's left posterior mylohyoid ridge area.

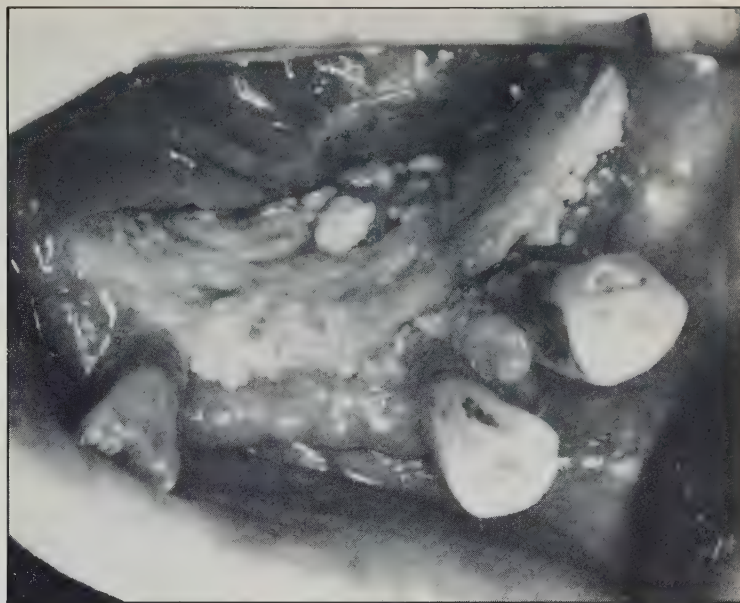


Fig. 9. Clinical photograph of advanced osteoradionecrosis in anterior floor of mouth region.

mentation of oral care regimens, which in turn has led to reduced morbidity in the cancer patient. The retention of as many teeth as possible allows for adequate mastication and facilitates satisfactory prosthetic rehabilitation.

For these reasons, the initial dental consultation is of utmost importance in outlining subsequent dental care. Sufficient time needs to be reserved, prior to commencement of radiation therapy, to allow as many phases of preliminary dental care as possible, to be completed. The extraction of teeth prior to radiation therapy does not affect the incidence of osteoradionecrosis, although such teeth should be extracted with a minimum healing period of seven to 10 days.³⁶⁻³⁸

Others recommend a minimum of 21 days from extractions to commencement of radiation.³³

This period of time allows organization of the socket blood clot and re-epithelialization to occur.¹³ Complete socket filling cannot be expected to occur until 15 weeks post-extraction.¹³ Criteria for removing teeth include: extensive caries, periodontal disease (root exposure or intrabony pockets), lack of opposing teeth, partial or incomplete eruption, teeth with periapical inflammation, heavily restored teeth, poor oral hygiene, mobile teeth or teeth with periapical pathosis other than inflammation.^{19,29}

Once the necessary teeth have been removed, a thorough home program of

oral hygiene and daily fluoride applications in custom trays is initiated.^{27,39,41}

Meticulous oral hygiene is the most effective means of preventing dental disease and topical fluoride applications (Table II) not only prevent the formation of PRC, but also decrease the pronounced cemental sensitivity felt by most patients.⁴²⁻⁴⁴

If a patient who has had previous radiation therapy in the oro-facial region presents to your office, a specific regimen should be followed. The patient should have routine, frequent dental recall visits (every three to four months). Examination at these visits should be focused on examination for PRC in the cervical region of the teeth.

Such carious lesions are often best treated using acid-etch composite resin restorations, although silver amalgams may be used.⁴² The patient must be taught to brush his/her teeth after every meal (or snack) as well as when arising and before retiring and should be encouraged to floss their teeth at least once a day. The radiotherapy-treated patient must also self-apply a daily fluoride gel using a custom tray.

In the authors' opinion, extractions following radiation should not be performed for a period of six months post-therapy. Antibiotic coverage (high dose penicillin — 2.0 gm. oral penicillin one hour prior to surgery; followed by 0.6 gm. four times a day for one week) should be utilized.^{38,43,45} To prevent further vascular compromise, low vasoconstrictor-containing local anesthetic solutions (1:200,000) should be used. Of the 2500 patients seen at our institution in the past five years and the countless post

TABLE II

Topical fluoride

Ingredients	Quantity	
1.	Sodium fluoride	40.0 g
2.	Trisodium phosphate	40.0 g
3.	Citric acid	20.0 g
4.	Sodium saccharine	0.8 g
5.	Methylparabens	8.0 g
6.	Sodium carboxymethylcellulose	112.0 g
7.	Deionized water	qs4000 ml

Procedures

- 1) Boil approximately 3000 ml. deionized water.
- 2) Then add #1, #2, #3, #4, and #5, and stir to dissolve.
- 3) Add #6 slowly with stirring until a clear gel is formed.
- 4) Cool, then qs to 4000 ml. with deionized water and stir to assure a uniform gel.

Packaging

250 ml. plastic bottles (aqueous solutions of sodium fluoride slowly attack glass)

Expiry: 6 months.

radiation extractions performed with the above regimen, only one case of extraction induced osteoradionecrosis has occurred.

The surgical technique should be atraumatic and periosteal elevation should be avoided. After extraction, the surgical site should be closed with sutures and post-surgical recall visits should be frequent. Endodontic therapy, as an alternative to extraction should, in the author's opinion, be avoided except in areas with excellent blood supply such as the anterior maxilla.

Any prosthetic device should be designed and maintained so as not to compromise the oral soft tissue and any prosthetic treatment should not commence until six months after completion of radiotherapy. △

The authors wish to thank Mr. K. Oxley and Ms. K. Hahn for assistance in preparing the illustrative material, Mrs. B. Kroll for assistance in preparing the pharmacological tables and Mrs. E. Goulet for her secretarial assistance.

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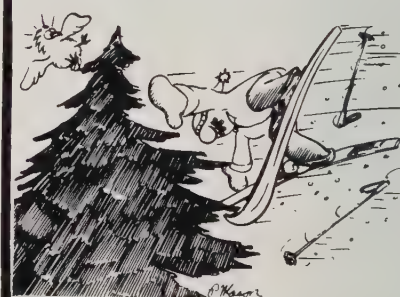
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FIRST AID TIP



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- Steady and support the injury. Do not move the victim
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THE UNERUPTED OR IMPACTED THIRD MOLAR — a critical appraisal of its pathologic potential

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ABSTRACT

The prophylactic removal of asymptomatic unerupted or impacted third molars constitutes a major proportion of all oral surgical procedures. Patients are advised to have this preventive surgery on the basis that such teeth, if retained, are likely to cause certain pathologic lesions. The evidence in the scientific literature on the prevalence of dentigerous cysts, mural ameloblastoma, epidermoid carcinoma and root resorption indicates that this concern is exaggerated. The retrospective data on the reasons for extractions of third molars confirm this conclusion. Until there are prospective studies which demonstrate a significant patient benefit from surgery exceeding the risks of retention, the practice should be discontinued. Third molars should be removed only where there is a defined pathologic indication.

SOMMAIRE

L'extraction préventive des troisièmes molaires enclavées ne présentant pas de symptômes constitue une bonne part de toutes les procédures chirurgicales buccales. On conseille aux patients de se faire extraire ces dents par mesure de prévention parce que s'ils les conservent, elles leur causeront probablement des lésions pathologiques. Dans les publications scientifiques, les preuves qu'on avance touchant la prévalence des kystes folliculaires, des améloblastomes muraux, des carcinomes épidermoïdes et des résorptions radiculaire indiquent qu'il y a

exagération. Les données rétrospectives touchant les raisons alléguées pour l'extraction des troisièmes molaires permettent de confirmer cette conclusion. Jusqu'à ce que des études prospectives démontrent que pour le patient il y a plus d'avantages à se les faire enlever que de risques à les conserver, il conviendrait de cesser cette pratique. On doit extraire les troisièmes molaires seulement lorsqu'il y a clairement des problèmes pathologiques.

The most common major surgical procedure in dentistry is the removal of unerupted or impacted third molars. It is also becoming the most controversial, especially when these teeth are asymptomatic. The conventional wisdom supporting removal is the belief that retention of these teeth will subject the patient to health risks because of the potential of their follicular tissue to cause pathologic or functional disorders. From this perspective, such surgery is considered an important preventive service. The contrary view holds that the risk of retention has not been scientifically documented. The procedures are criticized further as expensive, often with a debilitating post-operative course and not without the risk of permanent disability. The purpose of this article is to critically evaluate the scientific literature used as the basis for the rationale of this preventive surgical practice.

The controversy

The National Institute for Dental Research in the United States sponsored a Consensus

Development Conference¹ in 1979 which met "... in an effort to reach agreement on when and under what circumstances third molar extraction is advised. ..." While the Conference identified a number of well-defined pathologic indications for extraction, namely infection, non restorable carious lesions, cysts, tumours and destruction of adjacent teeth and bone, consensus was not reached on the extraction of asymptomatic teeth without evidence of pathologic change.

Third molar surgery as a preventive service is generally supported by the specialty of oral and maxillofacial surgery. The following examples of opinion in support of this practice are taken from the textbook literature. According to Hayward,² "Removal of third molars is an important preventive service in dentistry since retention of these teeth can cause significant disturbances." This view is shared by Kruger,³ who states that "All teeth that do not assume their proper position and function in the arch should be considered for removal. There are exceptions to this general statement but they are rare." Archer⁴ takes a less rigid position. Although recommending the removal of impacted teeth, he distinguishes this state from the asymptomatic unerupted or malposed tooth. According to Archer, "In my opinion there is no more justification for the routine removal of all nonimpacted third molars, partially or completely formed, than there is for routine tonsillectomies, appendectomies or hysterectomies as prophylactic procedures."

In the contemporary journal literature, similar support is found. For example, in 1979 Lytle⁵ concluded that "Most impacted teeth should be removed to correct an existing pathologic condition or to prevent future problems." He expressed the view that removal is a preventive service and questioned the need to clarify indications by dismissing the debate as a conflict stimulated by financial intermediaries rather than because of scientific introspection. In 1981, the same approach was taken by Fielding *et al.*⁶ who, when discussing the early extraction of third molars, concluded that since growth is essentially complete by age 17, this is the time to decide on the need for extraction. Further, he stated that "It is not advisable to wait until an impacted tooth becomes symptomatic." The articles by Laskin⁷ Azaz and Taicher,⁸ Chiles and Cosentino⁹ and Hinds and Frey¹⁰ are further examples from the literature in support of this practice.

Preventive extraction has evoked contrary views as well. In 1984, Guralnick¹¹ questioned the validity of reports suggesting the inevitability of morbid changes if impacted teeth are not removed at an early age. He noted that most of the reports of subsequent pathologic changes were anecdotal and not objective clinical studies. Bramley,¹² in 1981, stated that "In the light of our lack of knowledge (of the relative risks of removal versus retention) it is quite arbitrary to remove all asymptomatic third molars." A condemnation of preventive extraction was published by Friedman¹³ in 1983. After his review of the literature, he concluded that the morbidity of the retained impaction is largely mythical.

Trends in frequency and cost of third molar surgery

The dramatic decline in dental caries over the past decade is chiefly responsible for a substantial reduction in the number of teeth extracted. This, in turn, has increased the likelihood of third molar impaction or failure to erupt into functional occlusion. From Britain, Shepherd and Jones¹⁴ in 1987 reported a 40 per cent decrease in routine extractions but a 113 per cent increase in surgical extractions. They believed that increased identification of unerupted third molars through the greatly expanded use of panoramic films has led to the increased demand for removal. A study in Finland in 1985 concluded that for a group of 20 to 21 year old university students, 82 per cent of third molars should be extracted.¹⁵ The criterion used was simply the pre-

sence of impacted or potentially impacted teeth.

The authors of a recent study from the United States noted that while the overall rate of extraction generally is declining, the proportion of third molars extracted is increasing.¹⁶ For example, in their population sample from Seattle, third molars constituted slightly more than half of all extractions. Goldberg *et al.*¹⁷ ascribed the increase in third molar extraction to several factors such as availability of health insurance, declining caries rate, panoramic radiography, advances in anesthesia, pain control and antibiotic control of postsurgical infection.

The substantial increase in the number of surgical extractions translates into increased health care cost. In the United States, Friedman¹³ reported that the largest expenditure for any surgical procedure by the Blue Shield in the State of Pennsylvania was for third molar surgery. The author estimated, from government data, the cost of such surgery in the United States at \$425 million, which represented 50 per cent of the cost of all oral surgery. Similarly, increases are reported from England by Bramley¹² who noted that the approximately \$75 million in hospital costs did not include the many associated expenses to the patient and to the economy during the postoperative course.

The substantial increase in third molar surgery and a growing concern for health cost containment, have led to questions regarding the scientific validity of this practice. Further, there is a growing insistence that surgical procedures which purport to prevent disease should satisfy the demands of a risk/benefit analysis, i.e., there must be significant benefit which outweighs the surgical risks.

Pathologic indications

To proponents of preventive extraction, the unerupted or impacted third molar constitutes an abnormality with a significant pathologic potential. The fundamental rationale of the prophylactic extraction philosophy is the prevention of lesions such as the dentigerous cyst, ameloblastoma, epidermoid carcinoma, infection and root resorption of adjacent teeth. The role of these lesions with special reference to their prevalence will be assessed by examining the literature used in support of preventive extraction.

Dentigerous cyst

While the presence of a dentigerous cyst is unquestionably serious and is an accepted indication for removal of a third molar, the potential for cystic develop-

ment is stressed as one of the major reasons supporting the recommendation for preventive extraction. There is a perception in the profession that dentigerous cysts are relatively common. A few quotes from the literature will illustrate that the adjectives chosen by authors are partially responsible for creating this perception: "The high incidence of follicular cysts in the mandibular third molar."¹⁸ "The dentigerous cyst is a far more common type of odontogenic cyst than the primordial cyst."¹⁹ "The lower third molar is commonly related to a dentigerous cyst. . . ."²⁰ "Mandibular third molars are often prevented from erupting by dentigerous cysts. . . ."²¹ In the extensive anecdotal literature, the perception is especially pronounced as the following examples illustrate: "Pericoronal dentigerous cysts are commonly associated with impacted teeth,"²² and "the dentigerous, or follicular cyst is the most common developmental odontogenic cyst."²³

In the foundation reference literature, the studies of Dachi and Howell²⁴ in 1961 and Mourshed²⁵ in 1964 have been the standard sources for data on the prevalence of dentigerous cysts. An earlier (1949) study by Conklin and Stafne²⁶ suggested a relationship between the width of the pericoronal space and the presence of epithelium lining the follicle. Stafne²⁷ converted this relationship into a widely used diagnostic determinant by stating that ". . . a space (i.e. pericoronal) that has reached 2.5 mm in width represents a cyst with a definite epithelial lining in about 80 per cent of cases." This determinant was used for many years as the baseline for developing prevalence data. However, the article by Conklin and Stafne used as the supporting reference, made no such claim. As shown in Table 1, of the 100 follicles examined histologically, 70 had an epithelial lining and 86 had epithelium either as a lining or cords or nests. All of the six follicles which had a pericoronal space between 2.5 and 3.5 mm in width, had epithelium as a lining or as nests or cords. Five of the six had a lining. They concluded that the percentage of follicles with epithelium in any form varied directly with the width of the pericoronal space. The small number of follicles in their largest width category raised doubts about the validity of this conclusion. Since the three forms of epithelium listed are recorded from material from one group of patients, it is invalid to draw conclusions by comparing percentages across the columns using standard chi-square tests. When the first variable, i.e. the epithelial lining, is analyzed separately, there is no statistically signifi-

TABLE I*

Incidence of epithelial lining, epithelial lining or epithelial nests, epithelium in both forms

Group	Width of pericoronal space (mm).	Total follicles	Epithelial lining		Epithelial lining or epithelial nests		Epithelium in both forms	
			Number	Per cent	Number	Per cent	Number	Per cent
1	0.5 to 1.5	64	41	64	53	83	29	45
2	1.5 to 2.5	30	24	80	27	90	17	57
3	2.5 to 3.5	6	5	83	6	100	5	83
Total		100	70	70	86	86	51	51

* Reproduced from Conklin, W.W. and Stafne, E.C.²⁶ by permission of the Journal of the American Dental Association. The data on connective tissue were deleted.

cant relationship between the presence of the lining and the width of the pericoronal space ($X^2_2=3.011$ $p=.222$, linear trend $X^2_1=2.771$ $p=.096$). The same holds true for the second variable of epithelium as a lining or as nests ($X^2_2=1.915$ $p=.384$, linear trend $X^2_1=1.895$ $p=.169$). The third variable which is dependent on data from the other two, makes interpretation of its value difficult. From these data, there is no real relationship between the presence of epithelium as a lining or as nests or cords and the width of the pericoronal spaces. Since their conclusion is invalid, the diagnostic determinant later enunciated by Stafne has no basis in fact and should be discarded.

Dachi and Howell²⁴ observed "It was found that many impactions had a narrow zone of radiolucency around the crown which in all probability represented an enlarged follicular sac." In their study, when any portion of the circumcoronal radiolucency exceeded 2 mm, it was interpreted as a dentigerous cyst. They concluded "... that 37 per cent of mandibular impactions and 15 per cent of maxillary impactions had some type of radiolucency around their crowns. . . ." and 11 per cent of these were large enough to be designated as dentigerous cysts. The figures of 37 and 15 per cent have been widely quoted on the prevalence of dentigerous cysts and yet they simply refer to the presence of a follicular space of any size, whether normal or otherwise. The statement that 11 per cent of these spaces were large enough (> 2 mm in width) to be considered dentigerous cysts gives an inflated impression of cyst frequency. Close study of their results shows that only 12 of 394 impactions or 3 per cent had circumcoronal radiolucencies > 2 mm. The figures of 37, 15 and 11 per cent, in terms of prevalence of dentigerous cysts have no significance. On the basis of these questionable percentages, Dachi

and Howell supported the recommendation that all impactions should be removed because of their potential to give rise to cysts and other complications.

In a prevalence study of 1315 full mouth radiographs, Mourshed²⁵ reported 1.44 dentigerous cysts per 100 unerupted teeth, using the 2.5 mm determinant. Close examination of the data reveals that seven of the eight patients, who were determined to have dentigerous cysts, were less than 15 years of age. Of these cysts, three were associated with maxillary canines, two with bicusps and six with mandibular third molars. In the literature,^{28,29} it has been observed that erupting teeth, particularly canines, may have wide pericoronal radiolucencies which represent normal follicles. Although Mourshed used a 2.5 mm minimum width at any point to determine if the follicle was to be classed as a cyst, no actual measurements of the pericoronal spaces were reported. In his discussion, he states that if the pericoronal space exceeds 1 mm in width it raises suspicions of possible development of a dentigerous cyst; up to 1.5 mm is a questionable dentigerous cyst; 2 mm is suggestive and 2.5 mm or more is a probable dentigerous cyst. These comments are pure speculation with no factual basis. Given the use of an invalid determinant, the absence of other confirming measurements, the age of the patients, and the location of the teeth, Mourshed's conclusions on the prevalence of dentigerous cysts must be treated with serious reservations.

The use of the panoramic radiograph as a screening film in the 1960's and '70's resulted in a number of surveys of jaw pathology from which more current impressions of the prevalence of dentigerous cysts emerged. In 1973, Keith³⁰ reported 16 dentigerous cysts, or 1.6 per cent, in a study of 1000 pantomographs. In 1980 Alattar *et al.*,³¹ from a survey of 6780 films, reported a one per cent prevalence. However, a critical weakness of assessing

prevalence by measuring pericoronal width on panoramic films is the factor of image magnification. According to the authors of a current text on panoramic radiography,³² only when an object is known to be vertical can that dimension be measured with confidence in its accuracy. The result must be divided by the inherent magnification factor for the machine. Horizontal measurements are very unreliable, for the width of the image is affected significantly by the object's position in the focal trough. The same authors concluded that "... horizontal distances should not be measured in panoramic radiographs." When Stafne's determinant is used, the combination of an unfounded premise and an unreliable radiographic measurement have provided prevalence figures in which little if any confidence can be placed.

According to a recent article by Shear and Singh,³³ there is very little epidemiological data on dentigerous cysts. They reported an incidence of 0.001 per cent per year for dentigerous cysts in a white population of approximately one million in a district of South Africa. The incidence in 1,500,000 blacks was .0002 per cent. These much lower figures led the authors to question the validity of earlier data on the frequency of occurrence of the dentigerous cyst.

Lesions arising from the dentigerous cyst

The literature on indications for third molar extraction stresses the possibility of serious lesions such as the mural ameloblastoma, epidermoid carcinoma and muco-epidermoid carcinoma arising from the epithelial lining of the dentigerous cyst. Again, the literature creates an impression of a frequency which is significantly out of proportion to the facts. A few quotations illustrate how this perception is created. For example: from Shafer *et al.*,³⁴ "It is of great clinical sig-

nificance that numerous cases of ameloblastoma have been reported developing in the wall of dentigerous cysts. . . ."; from Wood and Goaz,³⁵ "This ameloblastoma that forms in the wall of a dentigerous cyst ranks next to the dentigerous cyst as the most frequently occurring pathologic pericoronal radiolucency;" from Tiecke,³⁶ "The high incidence of ameloblastic tumours in association with follicular cysts. . . ."

An early study³⁷ had reported occurrence as high as 15 per cent but had assumed a mural origin from mere association of tumour tissue with a third molar and/or a dentigerous cyst. Stanley and Diehl³⁸ reported that 16 per cent of ameloblastomas were associated with dentigerous cysts or impacted teeth. These high percentages have evoked criticism by oral pathologists because of the extreme difficulty in determining origin by histologic examination.³⁹⁻⁴¹ In 1978, Shteyer *et al.*⁴² critically reviewed the literature on ameloblastoma developing in the walls of odontogenic cysts. They concluded that these lesions constitute less than 5 per cent of all ameloblastomas.

To put this rare event into proper perspective, the frequency of occurrence of the ameloblastoma itself requires comment. Most of the information available is derived from the proportion of ameloblastoma in tissue specimens submitted for histologic examination. Regezi *et al.*⁴³ reported 78 ameloblastomas from a total of 54,534 biopsies (0.14 per cent). Weir⁴⁴ reported 38 cases in 18,167 consecutive specimens (0.2 per cent). Shear and Singh³³ reported an incidence of 0.3 ameloblastoma per million per year (.00003 per cent) in the white population of a South African district and 2.5 ameloblastomas per million per year (.00025 per cent) in the black population. Since the mural ameloblastoma probably represents less than 5 per cent of all ameloblastomas, the inescapable conclusion must be that transformation of the lining epithelium of a dentigerous cyst into an ameloblastoma is very rare indeed. Therefore, it is difficult to consider seriously this lesion as a potential preventable problem for which third molars should be extracted prophylactically.

Neoplastic transformation of a dentigerous cyst lining into epidermoid or mucoepidermoid carcinoma has been reported. However, some pathologists^{40,41} are skeptical of many early reports which may not have considered cystic degeneration of the neoplasm or spread from an adjacent site. Regezi *et al.*⁴³ studied biopsies submitted to the University of Michigan's Department of Oral Pathology

in a 41-year period between 1934 and 1975 and found no malignant tumours of odontogenic origin. In a recent study by Weir⁴⁵ of 15,783 biopsies submitted to a state university oral pathology service, only one malignant odontogenic tumour was reported. The extreme rarity of this lesion makes its prevention an untenable indication for prophylactic extraction of unerupted or impacted third molars.

Root resorption

The literature gives rise to a perception that external resorption of second molars from pressure of an unerupted or impacted third molar is a common occurrence.

According to Shafer *et al.*,⁴⁶ "Because of their location, impacted teeth frequently cause resorption of the roots of adjacent teeth." Goaz and White⁴⁷ have stated that "A common cause of external root resorption on the side of a tooth root is the presence of an unerupted adjacent tooth." Worth⁴⁸ states that "Unerupted third molars commonly cause external resorption of adjacent second molars." Most of the reports in the literature are anecdotal. However, in 1981, Nitzan *et al.*⁴⁹ published a study of the impacted tooth as a cause of root resorption. Based upon radiographs alone, the authors reported 15 cases of root resorption in 199 patients. These occurred in second molars where an adjacent impacted third molar was present. Eleven patients showed minimal resorption by the criterion of discontinuity and irregularity of the surface up to 2 mm in length. The authors did not report depth changes, if any. Only four cases (2 per cent) showed resorption greater than 2 mm in length. None of the patients over 30 years of age displayed any indication of root resorption. In view of the surprisingly low prevalence, the authors doubted the utility of extractions as a preventive measure.

In any case, the extreme difficulty of distinguishing early evidence of resorption from the image of an overlapping follicle has long been recognized by radiologists. It is generally accepted that only extensive resorption can with certainty be identified by the radiograph.^{48,50} Since there seems to be little evidence to support any suggestion of common or frequent occurrence, the term *rare* for resorption by impacted or unerupted teeth would be appropriate and therefore the practice of preventive extraction cannot be supported by this concern.

Pericoronitis

In 1979, The Consensus Conference on Removal of Third Molars¹ identified infection as a well-defined indication for

extraction. One of the conference workshops recommended that "Impacted teeth which develop soft tissue inflammatory conditions (pericoronitis) should also be removed because of their known potential for repetitive infection and morbidity." This statement of position is curious for it is immediately followed by the comment, "the incidence and recurrence rate of pericoronitis has not been studied and is deserving of prospective investigation."¹ The literature on this infection is almost exclusively anecdotal although there are some recent research data. According to Leone *et al.*,⁵¹ the tooth overwhelmingly associated with pericoronitis is a fully erupted, vertically oriented mandibular third molar partially covered by soft tissue or bone. These observations are supported by studies from Israel⁵² and Finland⁵³ which also identified the vertically oriented lower third molar as the tooth at greatest risk. Where the pericoronitis is recurrent, it is generally accepted as a defined indication for extraction, although there are some cases where simple excisional surgery to expose the clinical crown may be indicated. Prospective clinical studies are required to assess the indications and effectiveness of this procedure, compared with extraction as a preventive measure. However, if a severe primary pericoronitis has occurred, extraction is indicated unless the local anatomy can be improved by either the tooth achieving further eruption or by conservative management to control the local environment.

Mandibular anterior crowding

Impacted or erupting third molars have traditionally been implicated as a cause of crowding in the lower anterior teeth. The National Institutes of Health Consensus Development Conference, in its summary remarks, stated "The effectiveness of removal of third molars to prevent crowding of lower incisors is not borne out by the studies currently available."¹ As well, enucleation of third molar tooth buds was not considered to be an acceptable practice. Clearly, the removal of erupting third molars to prevent crowding of lower incisors lacks scientific support and cannot be used to justify preventive extraction.

Retrospective data on reasons why third molars were extracted

After examination of the pathologic basis used to support extraction of unerupted or impacted teeth, it is appropriate to assess the actual diagnostic reasons

TABLE II

Reasons for third molar extraction (per cent)

	Goldberg ¹⁷ (N = 600 patients)	Osborn ⁵⁴ (N = 16,127 teeth)	Howe ⁵⁵ (N = 1355 teeth)	Nordenram ⁵⁶ (N = 2630 teeth)
I. PATHOLOGIC				
Infection (incl. pericoronitis)	21.0	6.0	58.5	26.0
Pain	30.0*	2.1	2.5*	
Caries				
second molar		0.3		3.1
third molar		1.9	14.6	10.7
Periodontal	7.5		3.0	
Cyst	2.0†	0.3†	0.6	4.5
Tumour				
Root Resorption				4.7
Osteitis			0.7	1.6
TMJ		0.1		
Other Pathologic Changes‡				15.9
II. NON-PATHOLOGIC				
Asymptomatic	32.0§		15.1	40.3
Nonfunctional		32.9		
Orthodontic		16.6	1.1	10.7
Prosthetic	5.5		1.6	
Association with impacted second molar	1.0			
Other		38.4		

* pain not associated with infection: obscure facial pain in British study
† tumours included
‡ reasons not specified
§ included orthodontic reasons
|| not specified

given for surgical extraction (Table II). These data are taken from four studies, Goldberg *et al.*¹⁷ and Osborn⁵⁴ from the United States, Howe⁵⁵ from Great Britain and Nordenram *et al.*⁵⁶ from Sweden. In Great Britain and Sweden, pericoronitis was the principal pathologic indication. However, in the United States pain *not* caused by infection was the primary indication. Acute or chronic infection was the second most common reason given for extraction. It should be noted that the data from Great Britain include all third molars, which may explain the comparatively high percentage of pericoronitis. The relatively small percentages of cysts, tumours and root resorptions given as reasons for extraction in all three countries is in striking contrast to the emphasis in the literature on the potential of third molars to induce such lesions if retained. Except in the British report, the mere presence of an asymptomatic or non-functional third molar constituted the major reason for extraction, presumably for prevention.

Issues surrounding removal or non-removal of asymptomatic third molars

The current trend in making treatment decisions is the application of risk-benefit analysis. Where elective surgery for

asymptomatic impacted or unerupted third molars is recommended, the question of surgical morbidity compared to the morbidity associated with retention must be considered.

A number of studies have shown that the morbidity for all third molar surgery is approximately 7-10 per cent,^{54,57,58} of which the most significant postoperative complication is a 2 per cent rate of dysesthesia. However, the frequency of complications is overwhelmingly greater following removal of the complete or partial bony impaction. Virtually all of the postoperative infections and dysesthesias occurred in these cases. According to Osborn *et al.*,⁵⁴ the incidence of secondary infection was 51 times greater following removal of bony impactions compared with that for an erupted third molar.

One of the reasons given for early preventive removal is the consideration that surgery in the older patient is accompanied by increased morbidity. This issue prompted a provocative exchange of views in the Journal of the American Medical Association.⁵⁹ The exchange was initiated by a letter to the editor from a physician; his patient had received conflicting opinions about the removal of remaining asymptomatic third molars because one symptomatic third molar was to be extracted. The reply by the oral surgeon typifies the conventional wis-

dom, "Even when the impacted teeth are not currently involved in a pathological process, clinical experience has shown that many will ultimately create such problems."⁵⁹ He further recommended that prophylactic removal be done between ages 15 and 21 if normal eruption cannot be predicted. The response of a second physician⁶⁰ to these standard recommendations is perceptive. He noted that although surgical morbidity usually increases with age, this of itself is not an indication for prophylactic surgery. Further, he wondered why oral surgeons should not have to practice by the same standards as cardiovascular and E.N.T. surgeons, who must prove that preventive surgical procedures are associated with a significant decrease in morbidity.

A similar exchange appeared in the Journal of the American Dental Association. In response to two anecdotal articles^{61,62} recommending the early prophylactic extraction of third molars to avoid increased morbidity in the older patient, a dentist⁶³ asked, "What percentage of asymptomatic or nonpathologically involved teeth that are left untreated develop symptoms or pathology . . . later on?" The dentist also asks whether in the absence of pathologic indications for extraction, the risk of permanent or semi-permanent injury from preventive surgery is justified unless his first question

can be answered. The authors of the anecdotal articles replied that since information on the risk of retention is not available, *objective decisions based on benefit v.s. risk cannot be made*.⁶⁴ Nevertheless, the authors still recommended early removal as a preventive service, based not upon the risks of retention but on the risks of increased surgical morbidity in older patients. Such a reply to these pertinent questions is disquieting. Unless the validity of the need for surgery has been established, the fact of lesser morbidity in the younger patient should not of itself be used as an indication for preventive surgery.

It is an accepted practice to recommend that when one third molar has a defined indication for removal, all third molars also be extracted with the same general anesthetic. The argument for this is the avoidance of the risk of increased morbidity which may accompany future anesthetics if the retained teeth develop pathologic indications necessitating removal. However, the same principle of establishing a valid need for surgery must apply. The performance of unnecessary surgery to avoid anesthetic risk is unacceptable unless the benefit of such surgery can be proven.

Although the removal of asymptomatic impacted or unerupted third molars has been promoted as a preventive service, there is very little data, other than anecdotal, on the adverse sequelae if the teeth are not removed. A recent study of the panoramic radiographs of 11,598 patients with 23,702 impacted teeth, showed that less than 10 per cent of such teeth had a pathologic change.⁶⁵ The average age of patients with impacted teeth was 47 years. The principal changes reported were internal resorption (0.43 per cent), resorption of bone distal to the second molar (4.5 per cent), pressure resorption of the second molar (3.1 per cent) and dentigerous cysts (0.89 per cent). The authors concluded that if these results reflected the pathologic potential, then a reappraisal of the practice of early extraction of totally embedded and asymptomatic teeth is required.

Summary

Routine removal of asymptomatic unerupted or impacted teeth has been accepted by many in the profession as an important preventive health service. This practice is predicated on the belief that it is common for these teeth and their associated structures to cause serious pathologic consequences.

From this review of the literature, it seems quite clear that the pathologic

potential for the development of dentigerous cysts, mural ameloblastoma, epidermoid carcinoma and resorption of adjacent teeth has been grossly exaggerated. According to recent epidemiologic data, the yearly incidence of dentigerous cysts is a fraction of one per cent. The transformation of lining epithelium of these very uncommon cysts into mural ameloblastoma or epidermoid carcinoma is exceptionally rare. Since the literature on root resorption is almost exclusively anecdotal, it is impossible to draw conclusions on its prevalence. One current report indicated such a low prevalence that the authors doubted the utility of extraction of impacted teeth as a preventive measure. Similarly, there is little scientific data about the incidence and recurrence rate of pericoronitis, although information is available on the relationship between tooth position and the probability of the occurrence of infection. Again, there are no scientific data to support a causal relationship between impacted or unerupted third molars and crowding of anterior mandibular teeth.

An analysis of retrospective information on the reasons why teeth were extracted reveals that pathologic reasons for extraction, with the exception of pericoronitis, are relatively rare. The most commonly removed third molar was an asymptomatic and/or non-functional tooth.

Longitudinal clinical studies which demonstrate a significant patient benefit outweighing the surgical risk must be completed before such extraction can be recommended as an acceptable preventive practice. In the meantime, unless our conclusions with respect to the pathologic potential of these teeth can be refuted, the emphasis in the academic presentation should be changed. The exaggerated concern now expressed should not be the basis for teaching that surgical removal of asymptomatic non-pathologic unerupted or impacted third molars is a proven preventive service. Given the lack of a sound base of supporting scientific data, the not inconsiderable morbidity and the increasingly significant costs, prophylactic removal of asymptomatic or non-pathologically involved impacted teeth is a questionable practice. Extraction should be limited to those teeth with defined pathologic indications such as infection, cysts, tumours, resorption and unrestorable caries. Δ

Acknowledgement

The authors thank Dr. A. Donner, who carried out the statistical analysis for this paper. Dr. Donner is a professor in the Faculty of Medicine, Department of Epidemiology and Biostatistics, The University of Western Ontario, London, Ontario.

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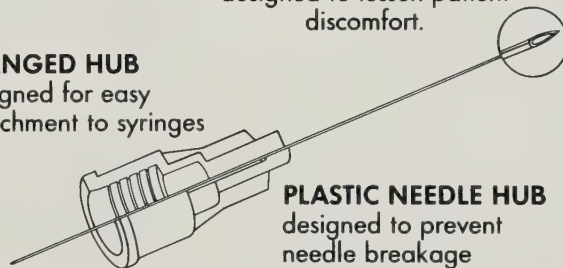
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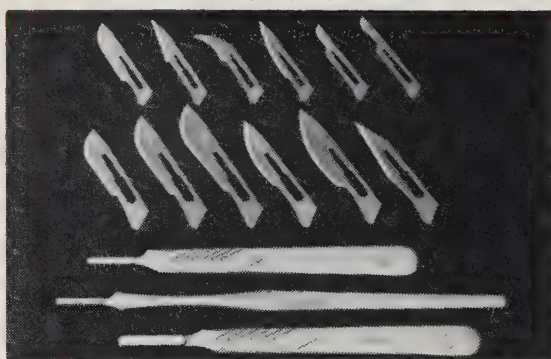
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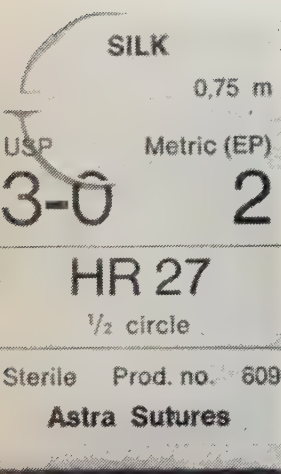
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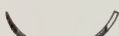
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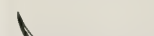
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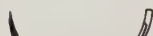
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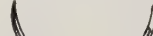
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ORAL PRECANCER:

Patterns, Complexities and Clinical Guidelines

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INTRODUCTION

Dentists are the health professionals most likely to detect oral precancer and thus have the responsibility of updating their knowledge of this constantly evolving field. Current definitions, classifications, and clinical guidelines are presented to help clarify this complex and important part of dental practice.

AVANT-PROPOS

Comme les dentistes sont les professionnels de la santé les plus susceptibles de déceler un précancer buccal, ils se doivent de se renseigner sur les dernières connaissances que la science possède sur cette maladie. Dans cet article, on trouvera les définitions, les classifications et les directives cliniques qui prévalent actuellement et qui pourront aider à préciser ce complexe et important aspect de l'exercice dentaire.

Definitions

A precancerous (premalignant) lesion is a morphologically altered tissue in which cancer is more likely to occur than in its apparently normal counterpart.¹ This focal, structural abnormality is clinically visible. Statistically, the risk of cancer developing in such lesions is greater than in clinically normal appearing tissue, at the same anatomic site, in individuals whose risk factors for cancer are otherwise similar. Examples: leukoplakia, erythroplakia.

A precancerous condition is a generalized state associated with a significantly increased risk of cancer.¹ Patients with one of these systemic conditions are statistically at greater risk of developing cancer than individuals without the systemic condition but whose risk factors for

cancer are otherwise similar. Examples: sideropenic dysphagia (Plummer-Vinson syndrome), Fanconi's anemia, and AIDS.

Classifications and Definitions

(i) According to Clinical Appearance (Table I)

Leukoplakia is a white patch or plaque that cannot be characterized clinically or pathologically as any other disease and is not associated with any physical or chemical causative agent except the use of tobacco.¹ Although food debris, bacterial plaque, inflammatory pseudomembranes (necrotic epithelium and neutrophils on the surface of ulcers) and lesions of acute pseudomembranous Candidiasis may also appear as white plaques, these can be easily wiped off with gauze and thus differentiated from leukoplakia (Fig. 1).

The most common mucocutaneous disease to mimic leukoplakia is oral lichen planus (OLP). In OLP however, only the

dorsum of the tongue (Fig. 2) occasionally exhibits white plaques greater than 5 mm. in diameter, while the common white lesions of OLP consist of radiating or interlacing white (Wickham's) striae and tiny papules usually distributed bilaterally on the buccal mucosae and gingivae.² Even in a patient with biopsy-proven OLP, a white plaque is unlikely to represent OLP unless located on the dorsum of the tongue.

Oral lesions of lupus erythematosus are much less frequent than those of OLP. While a late ("burned-out") stage of an oral discoid lupus erythematosus lesion may closely mimic leukoplakia,³ it would nevertheless be prudent to consider such a diagnosis as highly speculative and follow the guidelines presented later.

The designation of leukoplakia as a plaque infers that the margins appear clinically well-defined, that is, there is a distinct border between it and the adjacent normal mucosa.

Preleukoplakia is a grey or greyish-white area with indistinct borders.⁴ It is thought to represent a precursor stage of leukoplakia. This clinical entity may be more rapidly and more frequently reversible⁵ on elimination of causative factors than is leukoplakia.

Currently*, the term leukoplakia is only used clinically and includes both homogenous and nonhomogenous types. Homogenous leukoplakia is the most common type of oral premalignant lesion, but of the premalignant lesions, it is the least likely to exhibit epithelial dysplasia or to progress to carcinoma. Since leukoplakia is a clinical term, the inclusion of "or pathologically" in its definition is confusing. The purpose of this phrase is to retroactively invalidate a clinical diag-

TABLE I

Clinical Descriptive Classification of Premalignant Lesions of the Oral Mucosa

- I Leukoplakia
 - a) Homogenous leukoplakia*
 - b) Non-homogenous leukoplakia
 - (i) Erythroleukoplakia**
 - (ii) Nodular leukoplakia***
 - (iii) Verrucous leukoplakia
- II Erythroplakia

Frequently used synonyms:

- * leukoplakia simplex
- ** erosive leukoplakia, speckled leukoplakia, speckled erythroplakia
- *** speckled leukoplakia, speckled erythroplakia

* In the older literature, it was a collective term for any oral premalignant lesion defined clinically (see Table I) or histologically (ie. epithelial dysplasia — see Table IV).

nosis of leukoplakia whenever a subsequent biopsy identifies another specific disease entity such as lichen planus.

Erythroplakia is a red patch or plaque that cannot be characterized clinically or pathologically as any other disease.¹ As in leukoplakia, well-defined margins are implied. The lesion has been described as "velvety" in appearance, suggesting a slightly dull, slightly irregular surface to help distinguish it clinically from far more common cases of mucositis, which tend to have ill-defined margins and a smooth, shiny surface. Since erythroplakia is likely to evoke a strong inflammatory/immunologic host response,⁶ erythroplakia and mucositis are definitely not mutually exclusive,⁷ making both clinical and histologic diagnosis challenging. Erythroplakia is a less common type of premalignant oral mucosal lesion but is the most likely to exhibit epithelial dysplasia and to progress to carcinoma. Non-homogenous forms of leukoplakia are

intermediate between homogenous leukoplakia and erythroplakia not only in clinical appearance, but also in the probability of exhibiting epithelial dysplasia and progressing to carcinoma.

While *homogenous leukoplakia* is uniformly whitish, with a relatively smooth surface, *nonhomogenous leukoplakias* also contain red components and/or significant surface irregularities. *Erythroleukoplakia* is a white plaque with a relatively smooth surface plus areas of erosion (red, slightly depressed areas) (Fig. 3). *Nodular leukoplakia* is a red and white plaque with a micronodular (granular) surface (Fig. 4). *Verrucous leukoplakia* is a white or white and red plaque with exophytic, irregular sharp or blunt projections (Fig. 5).

(ii) According to Local Etiologic Factors (Table II)

Repeated, minor physical injury (chronic mechanical trauma) to the oral mucosa evokes a reactive thickening in one or more layers of the epithelium. Clinically, a white plaque with somewhat ill-defined borders is found closely related to the source of the injury (Fig. 6). On cessation of the injury, normal growth influences

re-establish control over the epithelium, which then regains a normal clinical and histologic appearance. Major physical injury (acute mechanical trauma) tears away the epithelium and results in erythematous to ulcerated, bleeding areas with ragged white areas (torn, partially adherent epithelium). Later, inflammatory pseudomembranes may cover the ulcer. Patients usually remember (the pain of) an acute traumatic incident, whereas chronic mechanical trauma is seldom noticed. The two types often coexist, for example, a chronic cheek or tongue chewer may accidentally bite himself much harder than intended. In either case, the source of injury and the reactive lesion are closely related in both space and time. Mechanical injury is not considered to play a major role in oral precancer or cancer. Therefore, reactive white lesions resulting from trauma are not referred to as leukoplakias but rather frictional lesions or lesions associated with cheek-chewing etc.⁸

The majority of patients with oral precancer, as well as cancer, are tobacco users.¹ Tobacco usage exposes the oral mucosa to both irritants and carcinogens. Discontinuation of tobacco use results in complete regression of some leukoplakias suggesting that these lesions had simply been reactive epithelial changes in response to the irritants (Fig. 7). Leukoplakias which do not completely regress on discontinuation of tobacco exposure are considered to be autonomous, that is, independent of both the original abnormal stimulus, as well as the physiologic stimuli which regulate normal epithelial structure and function. Such independence from normal control mechanisms (autonomy) is one of the chief characteristics of cancer and the major clinical differentiating feature between

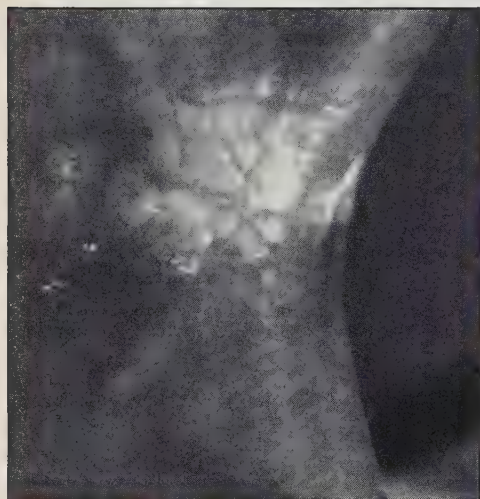


Fig. 1 Tobacco-associated homogenous leukoplakia of the buccal mucosal commissure. Cytologic smears had been negative for *Candida* hyphae. Biopsy revealed mild epithelial dysplasia.

TABLE II

Classification of Premalignant Lesions of the Oral Mucosa According to Local Etiologic Factors

- I Idiopathic leukoplakias
- II Tobacco-associated leukoplakias*

* does not include nicotinic stomatitis (smoker's palate) which is not precancerous.



Fig. 2 Multiple white plaques mimicking homogenous leukoplakia on the dorsum of the tongue. The patient has biopsy-proven lichen planus.

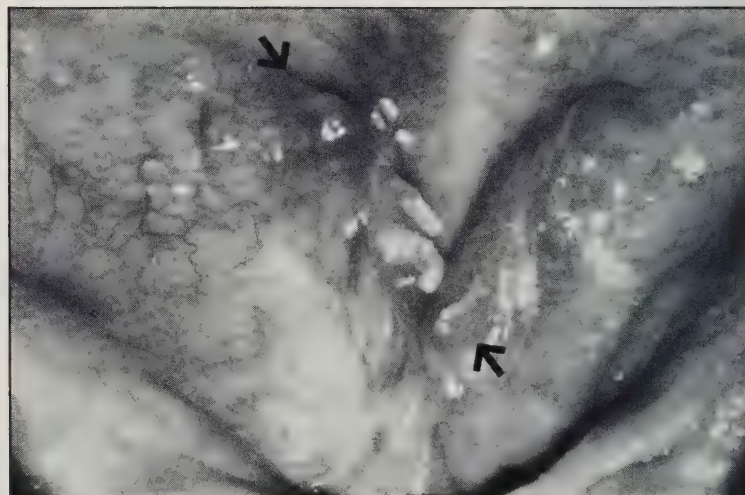


Fig. 3 Small, poorly defined area (arrows) of erythroleukoplakia in the floor of the mouth of a heavy smoker. Immediate biopsy revealed carcinoma-in-situ.

reactive and premalignant lesions. Total abstinence from tobacco for at least three months is required in order to distinguish reactive from autonomous, tobacco-induced leukoplakias.

A small proportion of patients with oral precancer, as well as cancer, have never used tobacco, nor is there any other identifiable local etiologic factor.⁹ In the absence of any identifiable local cause, a potentially premalignant lesion should be considered autonomous until proven otherwise.

Candidal infection of the oral mucosa may assume a number of distinctly different clinical forms.¹⁰ The chronic hyperplastic type, also known as Candidal leukoplakia, closely mimics homogenous or nonhomogenous leukoplakia (Figs. 8, 9). The chronic atrophic type on the other hand, may mimic erythroplakia. A significant number of diverse oral mucosal conditions, including precancerous lesions, are found to be infected by Candidal hyphae. Erythroleukoplakia and nodular

leukoplakia are very often infected.¹ Burning symptoms, red, red and white or white oral mucosal lesions, especially in tobacco users and or denture-wearers, should alert clinicians to the possibility of Candidal infection. A cytologic smear sent to an Oral Pathology Laboratory will help to quickly confirm or rule out the presence of pathogenic (hyphal) forms of the organism. While two weeks of antifungal therapy is usually sufficient to eliminate Candida from purely atrophic (red, depressed) lesions, the hyperplastic (at least partially white and elevated) lesions may take over two months to resolve. Whenever possible, Candidal infection should be eliminated prior to biopsy, since Candida induce a reactive ("pseudoeupitheliomatous") hyperplasia in epithelium which greatly complicates accurate histologic assessment of dysplasia. Although suspected, there is as yet no conclusive proof that chronic Candidal infection increases the risk of oral cancer.¹¹

Lesions resembling leukoplakia (or OLP) (Fig. 10)¹² sometimes occur only at sites in direct contact with metallic dental

restorations. Despite the fact that patch-testing for delayed-type hypersensitivity to metallic restorative materials often proves negative, the lesions disappear or markedly improve soon after replacement of the restorations by antigenically dissimilar materials.¹³ Although many of these patients are allergic to mercury¹⁴ or some other component of metallic restorations, inappropriate allergens may have been selected and/or the skin (the usual site for patch testing) may be an inappropriate site to test for oral mucosal allergy.¹⁵ Metallic restorations may induce leukoplakia or lichenoid mucosal lesions via contact allergy,¹⁴ electrogalvanic currents,¹² or mechanical/chemical irritation, but their contribution to carcinogenesis is probably minor. While composite resins are often used to replace amalgams in suspected cases of metal restoration-induced mucosal lesions, up to half of such patients may give similar reactions to composite resins.¹⁶ Porcelain or porcelain bonded to gold may be the least allergenic alternative material.

(iii) According to Site (Table III)

The most common sites for intraoral (ie. excluding the vermillion of the lips) squamous cell carcinoma are the lateral/ventral tongue and floor of mouth. A given clinical type of precancerous lesion in these sites is much more likely to exhibit histologic dysplasia and progression to carcinoma than at other intraoral sites¹⁷ with the possible exception of the soft palate — anterior pillar — retromolar complex.^{18,19} The most common site for tobacco-associated leukoplakia in dentate patients is the retromolar pad area, while in denture wearers it is the edentulous alveolar ridge mucosa. A common site of tobacco-associated leukoplakia in dentate as well as edentulous patients is the buccal

TABLE III

Classification of Intraoral Sites of Premalignant Lesions According to the Risk of Progression to Cancer

- | | |
|-------|--|
| I | High Risk |
| (i) | floor of mouth |
| (ii) | lateral/ventral tongue |
| (iii) | soft palate-anterior pillar-retromolar complex |
| II | Intermediate Risk |
| | All other sites not included in I or III |
| III | Low Risk |
| (i) | Dorsum of tongue |
| (ii) | Hard palate |

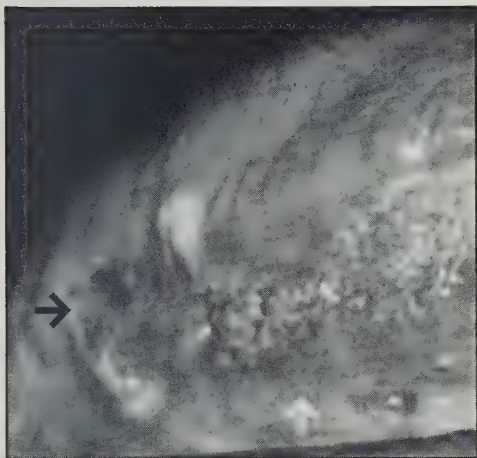


Fig. 4 Idiopathic nodular leukoplakia (arrows) on the lateral/ventral tongue of a female. Cytologic smears were negative for Candidal hyphae. Biopsy revealed early invasive squamous cell carcinoma.

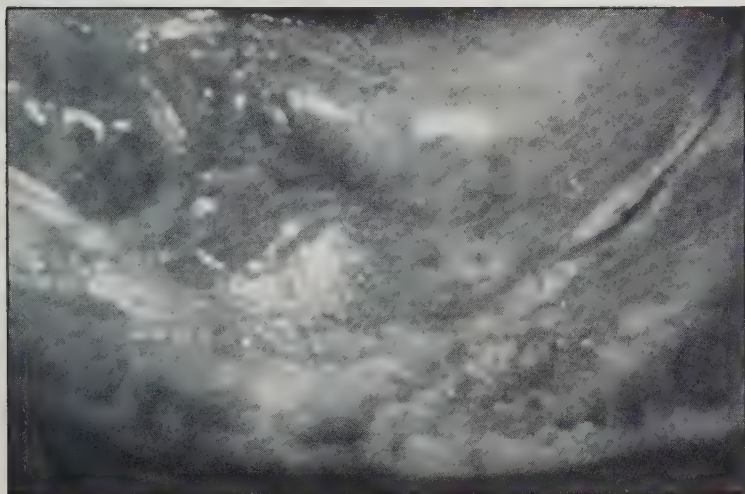


Fig. 5 Idiopathic verrucous leukoplakia over most of the anterior floor of mouth/edentulous ridge area in an elderly female. Four years after refusing follow-up care, she developed verrucous carcinoma here as well as the left buccal mucosa.

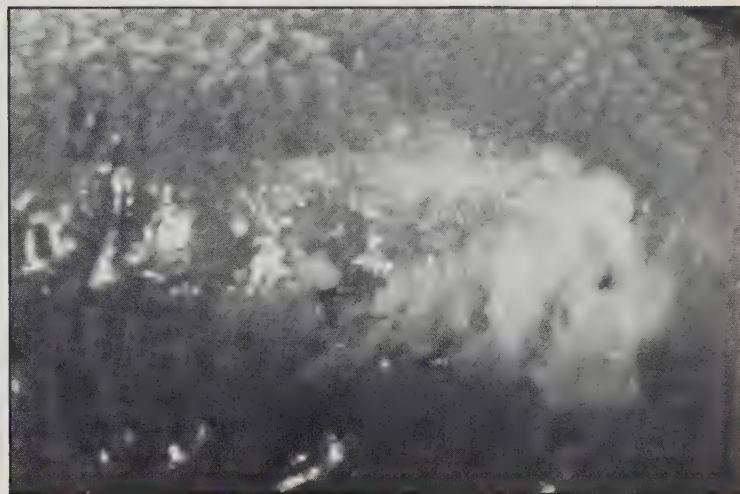


Fig. 6 White, ragged plaque mimicking verrucous leukoplakia and "hairy leukoplakia" of AIDS. The patient was a chronic tongue chewer.

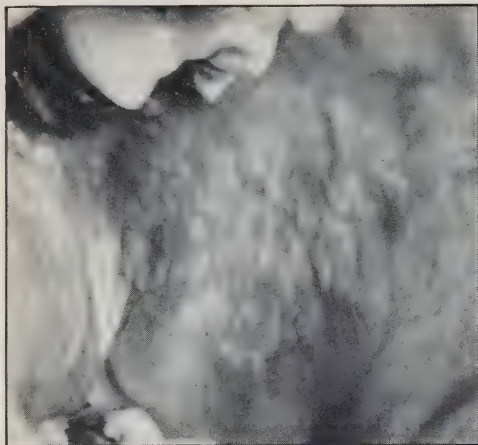


Fig. 7 Homogenous tobacco-associated leukoplakia involving much of the buccal mucosae as well as other sites. After three months of complete abstinence from tobacco, there was almost complete regression of all lesions.

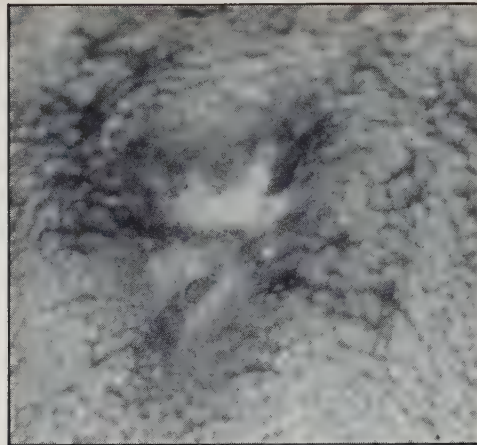


Fig. 8 Chronic hyperplastic Candidiasis of the mid-dorsum of the tongue ("median rhomboid glossitis") mimicking erythroleukoplakia. After one month of antifungal therapy and total abstinence from tobacco, the lesion completely regressed.

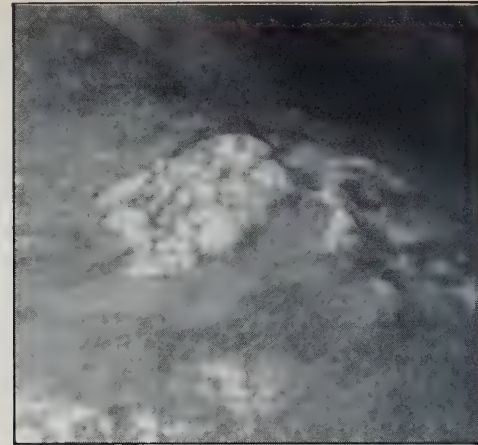


Fig. 9 Chronic hyperplastic Candidiasis mimicking nodular leukoplakia on the dorsum/lateral tongue of an elderly female denture wearer. Six weeks of continuous antifungal therapy resulted in significant but incomplete regression. Excisional biopsy revealed chronic hyperplastic Candidiasis.

mucosal commissure. Lesions at this site are frequently at least partially caused by *Candida*.²⁰

(iv) According to Histopathologic Features (Table IV)

The further a precancerous oral mucosal lesion has progressed along the road to cancer, the more it will histologically resemble carcinoma instead of the normal epithelium of a given site. The earliest detectable changes can mimic lichen planus, as the immune reaction to antigenically altered dysplastic epithelium may precede histologically detectable epithelial changes.⁷ This could lead to a histologic underdiagnosis such as lichen planus or non-specific mucositis.⁷ Later, hyperkeratosis (thickened keratin layer) may be seen histologically but still without any other epithelial changes to suggest dysplasia. *Epithelial dysplasia* is the histopathologist's term for precancer based on his subjective evaluation of morphologic changes in the epithelium. The more severe the dysplasia, the greater is the probability and the sooner is invasive carcinoma anticipated. It should be re-emphasized that currently, leukoplakia is used as a clinical term, whereas epithelial dysplasia is a histopathologic term. Dysplasia, as a diagnosis, should be appropriately prefaced to indicate degree of severity (Table IV). Dysplasia by itself denotes disordered growth or maturation with a precancerous connotation only when applied to epithelium but not when applied to bone lesions such as fibrous dysplasia or periapical cemental dysplasia.

Complexities

While important general patterns in oral precancer can be derived from epidemio-

TABLE IV

Classification of Precancer According to the Histologic Stage of Progression

- | | |
|-------|------------------------------------|
| I | Non-specific precancerous changes |
| (i) | Mucositis ⁷ |
| (ii) | Hyperkeratosis |
| (iii) | Mild epithelial dysplasia |
| II | More specific precancerous changes |
| (i) | Moderate epithelial dysplasia |
| III | Specific precancerous changes |
| (i) | Severe epithelial dysplasia |
| (ii) | Carcinoma-in-situ |

All may be accompanied by an immunologic/inflammatory reaction of varying intensity, depending primarily on the antigenicity of the dysplastic epithelium.

logic studies, there are a number of complexities which must be kept in mind when dealing with individual patients.

Not all oral cancers *seem to be* preceded by, arise from or adjacent to clinically evident precancerous lesions or histologically documented epithelial dysplasia.²¹ If this were correct, then some cases of carcinoma should arise *de novo*, ie. directly from clinically and histologically normal epithelium. More likely, however, premalignant changes always precede oral carcinoma (Fig. 11) but fail to be detected,⁷ are inadequately sampled²² or are otherwise misdiagnosed.^{7,23} Also, relatively little attention may be paid to the history of previous lesions or to the documentation of concurrent precancerous lesions when a patient with an obvious (advanced) carcinoma presents for treatment. Routine inclusion of oral

pathologists on the tumor boards of cancer clinics would be a logical step toward improving these and other deficiencies in our current knowledge, diagnosis, as well as management of oral cancer.²⁴

It may be extremely difficult to distinguish clinically between certain benign mucosal conditions, precancer and early cancer.^{7,25,26} An adequate biopsy of all potentially premalignant lesions is therefore mandatory both medically and legally.²²

Precancerous lesions may unpredictably regress or completely disappear without removal of local etiologic factors, while on the other hand, a significant proportion may recur following excision.^{9,27} Such spontaneous regression is probably immunologically mediated.⁷ Recurrence after apparently complete excision (ie. with a margin of clinically normal appearing mucosa) is most likely due to "field cancerization"²⁸ in which the margins of the excised lesion, although lacking specific clinical (Table I) or histologic (Table IV) criteria for precancer, may nevertheless have undergone subtle precancerous changes.⁷

Clinically apparent precancerous lesions may, despite little or no histologic evidence of dysplasia, recur after excision and spread to involve more and more oral mucosal sites, and eventually give rise to carcinoma.^{7,17,29} Again, inadequate sampling and confusion with mucositis may be a major problem.⁷ Obviously, the idiopathic and progressive (ie. autonomous) clinical characteristics of such lesions should be taken seriously even when histologic evidence of precancer (ie. epithelial dysplasia) is minimal or absent.^{7,16}

Some studies suggest that ethanol abuse may pose an even greater risk for

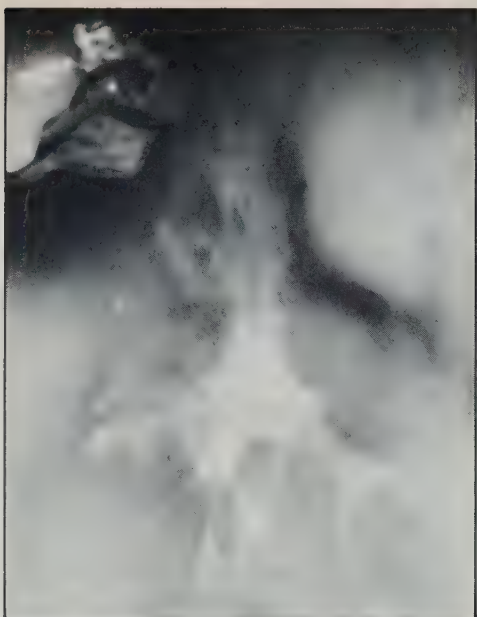


Fig. 10 Solitary white plaque with peripherally radiating white striae and erythematous, ill-defined margins arose soon after placement of, and directly apposed to a large MOB amalgam on 2.6. The lesion was clinically and histologically consistent with lichenoid allergic contact mucositis.

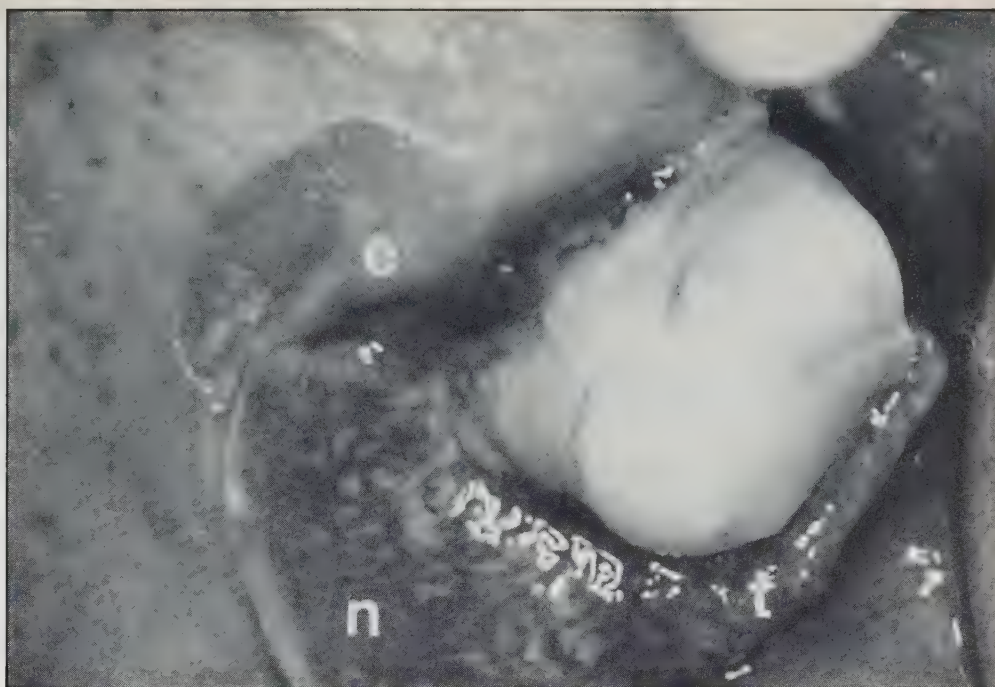


Fig. 11 Concurrent erythroplakia (e), nodular leukoplakia (n), and tumor (t) around maxillary molar in a tobacco chewer. Immediate biopsies revealed moderate dysplasia, squamous cell carcinoma and squamous cell carcinoma, respectively.

development of oral cancer than tobacco abuse,³⁰ yet there does not appear to be a strong association between ethanol abuse and leukoplakia.¹ Similarly, while Plummer-Vinson syndrome³¹ and low serum iron levels³² have been shown to be risk factors in oral squamous cell carcinoma, there is paradoxically no such data linking these precancerous conditions to oral precancer.

Although the majority of oral cancer patients are heavy users of both tobacco and ethanol, precancerous lesions in patients who are non-users of either substance and in whom no other local etiologic factor can be demonstrated, show a higher than expected incidence of both dysplasia (**Fig. 12**) and malignant transformation (**Fig. 4**).¹⁶ But since tobacco-

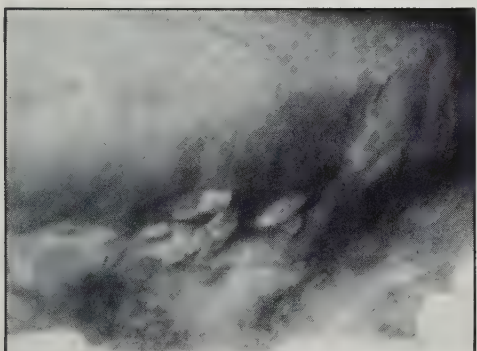


Fig. 12 Recurrent, idiopathic leukoplakia of the lateral/ventral tongue. Biopsy again revealed severe epithelial dysplasia. Following adequate re-excision, the patient has been free of lesions for two years.

associated leukoplakia is far more prevalent than the idiopathic form, even if a lower proportion of tobacco-associated leukoplakias become malignant, these cancers would still outnumber idiopathic ones.

Despite the rarity today of Plummer-Vinson syndrome even in Sweden,³¹ not to mention North America, most non-users of tobacco and ethanol who develop oral and upper aerodigestive tract cancers seem to be women.³³ Similarly, although the increasing female: male ratio for oral cancer has been blamed primarily on increased frequency of tobacco use among women,³⁵ some studies show that a greater proportion of patients with idiopathic leukoplakia are women.^{29,34}

Clinical Guidelines

Red, red and white or white oral mucosal lesions, with or without well-defined clinical margins, regardless of surface characteristics, are potentially premalignant. The detailed clinical features should, in general, more closely resemble classical premalignant lesions (**Table I**) than oral mucosal lesions without premalignant potential. In either case, since the differential diagnosis includes at least one clinically significant entity (the precancerous lesion), obtaining a definitive diagnosis is mandatory.

If the lesion is in a high risk site (**Table III**), no more than two weeks should be spent evaluating the effect of

eliminating local etiologic factors. In low risk sites, especially with relatively low risk homogenous leukoplakias, up to three months may be spent in this endeavor.

Considerable training, clinical experience and continuing education is required to accurately and efficiently diagnose and treat diseases of the oral mucosa. This is especially the case with oral precancer, about which there is still much to learn. Each case of suspected oral precancer may be screened by the family dentist as suggested above. If elimination of apparent local etiologic factors results in complete regression, the lesion was most likely reactive. But since up to one third of precancers regress spontaneously,^{9,31} long-term follow-up is required to rule out recurrence and malignant degeneration.^{9,34} Recalls at three-monthly intervals are recommended.

If a suspected premalignant lesion does not have an apparent local cause, does not fully regress on removal of suspected local causes or recurs despite removal of suspected local causes, definitive treatment should be based on histopathologic diagnosis. Until the biologic behaviour of oral precancer is better understood, it is not possible to set down much more detailed or simpler clinical guidelines. Management of oral precancer patients by specialists such as oral pathologists and oral surgeons who are actively involved in the epidemiologic, clinical,

pathologic as well as basic science aspects of oral precancer, is important for the welfare of not only the individual precancer patient but all precancer and cancer patients. Informed, prompt referral of patients with precancer should be very gratifying considering the distressing fact that even today, half of oral cancer patients die of their disease despite comprehensive therapeutic efforts. Δ

Acknowledgement

The author would like to thank **Ruth MacLean** and **Paul Doleman** for their excellent secretarial and photographic assistance respectively.

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L'AMÉLIORATION DE LA QUALITÉ DES SOINS: Nouvelle perspective

Michel Lévy, DMD

Le Dr M. Lévy est étudiant avancé à la maîtrise en santé publique
à l'Université San Diego State, San Diego

RÉSUMÉ

De récents progrès ont contribué à une meilleure compréhension des facteurs qui affectent le développement et la progression de la carie. Ces développements n'auraient pas été mis en pratique par l'ensemble de la profession. Les principes de diagnostic et de traitement traditionnels pourraient contribuer à l'application de traitements dentaires inutiles et être ainsi incompatibles avec des soins de qualité. Afin d'atteindre un niveau de qualité de soins acceptable, il est donc essentiel d'établir des critères spécifiques de diagnostic et de traitement qui s'appuient sur les dernières connaissances scientifiques.

Mots Clés:

qualité des soins — assurance-qualité — normes relatives aux soins dentaires.

SUMMARY

Recent advances in understanding the factors that affect the development and progression of carious lesions have not been widely adopted by the profession. Traditional diagnostic and restorative principles may be incompatible with quality care and could contribute to the imposition of unnecessary dental treatment.

Quality care should be based on appropriate standards of care as well as specific diagnostic and treatment criteria consistent with current scientific knowledge.

Key Words:

quality of care — quality assurance — standards of care.

On a pu observer, depuis quelques années, un déclin dramatique de la carie dentaire chez les enfants, ainsi qu'une amélioration importante de la santé buccale parmi la population adulte. La baisse de la prévalence de la carie pourrait être attribuée principalement à des meilleures habitudes d'hygiène, nutritionnelles, ainsi qu'à une présence accrue de fluorures dans l'environnement.

En effet, aujourd'hui aux États-Unis, 50 pour cent des enfants n'auraient plus de carie et, malgré un retard significatif qui nous distingue de nos voisins du sud, tout indique que cette tendance se produira éventuellement au Québec.

De quelle façon ce progrès s'est-il manifesté dans nos approches en santé communautaire? Il a été suggéré que l'amélioration de l'état de santé bucco-dentaire suit une trajectoire indépendante de nos activités préventives, n'étant que peu influencée par ces dernières. En fait, les

approches traditionnelles sont fondées sur une conception particulièrement restreinte de la prévention, c'est-à-dire l'identification et la diminution des affections bucco-dentaires par l'entremise de programmes de portée générale, facile d'application (fluorures topiques, éducation sanitaire, etc.).

Par contre, face à des problèmes plus insidieux ou intractables, notre attitude en santé publique révèle une indifférence qui ne peut que nuire à l'élaboration de nouveaux modes d'interventions ne connaissant pas encore de précédents.

Une des erreurs fondamentales du passé a été de ne pas chercher à évaluer et à améliorer la qualité des soins dentaires. Ceci est la conséquence d'avoir tranché une ligne de démarcation entre les soins préventifs et ceux que l'on appelle "curatifs", les rendant mutuellement exclusifs.

Afin de mesurer l'amélioration de la santé buccale de la population, nous nous sommes servis à date d'indices comme le CAO. Bien que ces indices soient des mesures quantitatives valables, ils sont inadéquats pour déterminer la qualité ou la nécessité des traitements reçus.

En période de crise ou d'endémicité, l'accessibilité aux soins prime sur d'autres considérations telle la qualité des traitements. Ceci était le cas au Québec, il

y a quelques années, alors que la carie dentaire était endémique chez les enfants. On souhaitait obtenir un maximum d'interventions restauratrices qui refléteraient (supposément) une amélioration de la santé buccale. Les critères de diagnostic et de traitement pendant cette période étaient basés sur des conditions très différentes de celles d'aujourd'hui.

On a pu constater un autre changement moins évident mais tout aussi important; les attentes et les perceptions de la société ont évoluées, le public étant mieux informé et plus exigeant qu'autrefois. Ceci se reflète de plusieurs manières; tout d'abord, la restauration des dents n'est plus considérée comme une exigence fondamentale au maintien d'une dentition dite "saine". Le public, plus conscient de son influence sur l'état de sa propre santé, perçoit moins favorablement la notion que des soins basés sur une technologie de pointe puissent restaurer la dentition à son état original.

L'évaluation de la qualité des soins est généralement basée sur un modèle qui comprend la structure, le processus et le résultat. Ce concept, employé souvent en médecine, satisfait mal les exigences de la dentisterie. La première étape serait l'établissement de normes de qualité basées sur des critères spécifiques, ce qui n'est pas une tâche facile. On pourrait citer quelques développements récents significatifs. En 1984, la Grande Bretagne a créé le "Committee of Enquiry into Unnecessary Dental Treatment". Cet organisme émit plusieurs recommandations dont l'établissement de normes de pratiques relatives aux soins dentaires¹³. Ce comité rapporta l'existence d'un haut niveau de surtraitement qu'il attribua surtout à des méthodes diagnostiques dépassées. La Fondation Kellogg, en 1987, a approuvé un projet concernant le contrôle de qualité en dentisterie⁵. Citons aussi que la marine américaine, fidèle à ses traditions, possède depuis longtemps des normes de qualité extrêmement détaillées qui couvrent tous les aspects de la profession^{7,8}.

Afin d'illustrer le concept de normes de qualité, prenons comme exemple le *diagnostic de la carie*. Un diagnostic répondant aux normes détecterait toute lésion active tout en minimisant les risques de traitement inutile ou prématuré. Présentement, la carie débutante n'est plus considérée comme un phénomène irréversible mais plutôt un processus dynamique de déminéralisation et de reminéralisation².

En 1966, Backer et Dirks démontrèrent que 87 pour cent des caries incipientes observées initialement ne progressaient pas ou disparaissaient spontanément.

Cependant, leurs constatations ne concordent pas avec les croyances et les connaissances scientifiques de l'époque, et cette étude, considérée suspecte, tomba dans l'oubli. De plus récentes études corroborent les résultats de cette enquête.

Notons que les résultats de Backer et Dirks furent obtenus à une période où l'hygiène buccale était beaucoup plus déficiente qu'aujourd'hui⁹. On pourrait donc s'attendre à ce que le risque de transformation de ces lésions incipientes en carie véritable serait présentement moindre qu'il était à cette époque, ce qui suggère l'existence d'une zone d'incertitude diagnostique actuelle beaucoup plus grande qu'autrefois.

Autre constatation inquiétante, c'est qu'il y aurait raison de croire que ces lésions incipientes sont souvent diagnostiquées et restaurées systématiquement¹⁶. Certaines sources Nord-Américaines rapportent que le nombre d'interventions prématurées ou inappropriées auraient pris des proportions alarmantes. Au Québec, un certain niveau de surtraitement a été observé dans les résultats de l'Enquête Santé Dentaire Québec en 1983-1984.

Une des raisons de ce surtraitement peut être attribuée à l'influence des principes de diagnostic et de traitement tel que définis par Black en 1936. Malgré les progrès dans la compréhension et dans la prévention de la carie, les institutions d'enseignement ont été lentes à adopter de nouvelles méthodes d'intervention. Certains concepts, dont celui de "l'extension pour la prévention" dans la détermination des formes de cavités devraient être révisés.

Des soins de la plus haute qualité, dispensés inadéquatement et sans nécessité, ne fourniront au patient qu'un traitement médiocre.

En fait, les techniques traditionnelles de restauration sont les alternatives les plus agressives pour prévenir la récurrence de la carie. Un grand nombre de ces restaurations se détérioreront éventuellement et devront être remplacées. Aucune étude n'a pu démontrer la supériorité d'un matériel de restauration, quel qu'il soit, sur la structure saine de la dent².

D'autres alternatives existent pour le traitement de carie incipiente, par exemple:

- 1) surveillance active;
- 2) scellant;
- 3) scellant combiné avec une restauration conservatrice en composite;

- 4) utilisation d'agents cariostatiques: fluorures topiques et solutions antibactériennes;
- 5) amalgame sans extension;
- 6) Vitrification de puits et fissures par laser (méthode expérimentale très prometteuse¹⁵).

La participation des agents payeurs, comme la RAMQ et les assurances privées, est évidemment essentielle. Tout traitement préventif démontrant une efficacité devrait être reconnu et rémunéré adéquatement pour que le dentiste en pratique privée puisse développer une véritable approche préventive.

Discussion

Cet exposé démontre l'importance d'établir des critères spécifiques de diagnostic et de traitement basés sur les dernières connaissances scientifiques afin d'atteindre des normes acceptables de qualité. On s'aperçoit que la ligne de démarcation entre la prévention et les traitements restauratifs n'est pas aussi claire que l'on voudrait croire. Notons deux éléments essentiels:

- 1) L'implication de la profession dans la recherche clinique et épidémiologique pour déterminer l'efficacité à long terme de nouveaux traitements.
- 2) L'application de normes de qualité qui rejoindraient tous les aspects de la dentisterie, y compris le secteur public, pour que chaque personne puisse s'attendre à recevoir la meilleure qualité de soins. Une norme de qualité étant celle contre laquelle la qualité d'un traitement peut être comparée, toute déviation significative dénotera un niveau de qualité discutable. Rappelons-nous aussi que des soins de la plus haute qualité, dispensés inadéquatement et sans nécessité, ne fourniront au patient qu'un traitement médiocre.

Conclusion

Une combinaison de facteurs socio-culturels, économiques et politiques a entravé par le passé le développement de programmes pouvant améliorer la qualité des soins au Québec. Cependant, le climat actuel étant propice au changement, d'importants progrès pourraient se réaliser.

Pour le dentiste en santé communautaire, cela signifiera adopter une perspective plus élargie de la prévention. Définir et mesurer le niveau de qualité de soins demandera certaines approches plus audacieuses et innovatrices que celles employées autrefois. Cette implication serait aussi dans l'intérêt de l'intervenant du secteur privé qui exerce dans un contexte où la complexité ne cesse de croître et où le risque de litige devient de plus en

plus menaçant. Il suffirait pour conclure, de citer les paroles d'Hippocrate: "primum non nocere", avant tout — ne pas faire de mal. Δ

Remerciements

L'auteur tient à remercier M^{me} Elisabeth Pères d'avoir bien voulu réviser le manuscrit, ainsi que le D^r Jean Robert, MD, MSc, FRCP, Chef du DSC de l'Hôpital Saint-Luc pour sa précieuse collaboration.

Le D^r Michel Lévy est dentiste-conseil au DSC de l'Hôpital Saint-Luc. Les demandes de tirés à part doivent être adressées à son attention au DSC de l'Hôpital Saint-Luc, 1001, rue Saint-Denis, Montréal (Québec) H2X 3H9.

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April 12-15: Bundesverband der Deutschen Zahnärzte in Killesberg/Stuttgart, Germany. Contact: Cornelia Hackenbruch, Bundesverband d. Deutschen Zahnärzte, Universitätsstr. 73, 5000 Köln 41, Germany.

April 17-19: Oral Complications of Cancer Therapies by the National Institute of Health in Bethesda, Maryland. Contact: Kathleen Edmunds, Prospect Associates, Suite 500, 1801 Rockville Pike, Rockville, Maryland 20852 USA. (301) 468-MEET.

April 19-23: Irish Dental Association, Annual Scientific Conference in Galway, Ireland. Contact: M. Ferguson, Irish Dental Association, 29 Kenilworth Square, Dublin, 6, Ireland Phone 978435/6.

April 23-27: 43rd Annual Meeting of the American Academy of Oral Pathology in Savannah, Georgia. For information, contact: Dr. Dean K. White, American Academy of Oral Pathology, College of Dentistry, University of Kentucky, Lexington, KY 40536-0084, USA.

April 26-30: 14th Asian Pacific Dental Congress at the Korea World Trade Center in Seoul, Korea. For further information, please contact: Secretariat of the 14th APDC, c/o Korean Dental Association, PO Box 41 Youngdeungpo, Seoul 150, Korea Tel: (02) 653-3351/3.

April 27-29: Journées dentaires internationales de Nice-Côte d'Azur in Nice, France. For information, write: Dr. Jean-Louis Vidal-Revel, President, Journées dentaires internationales de Nice-Côte d'Azur, 37, av. Villermont, 06000 Nice, France.

April 27-30: Ontario Dental Association 122nd Annual Spring Meeting at the Metro Toronto Convention Centre. All members and groups of the dental profession are invited to prepare a clinic for presentation at the Spring Convention. Deadline for applications is November 30, 1988. For more information, contact: Diana Thorneycroft, ODA Headquarter, 234 St. George St. Toronto, Ont. M5R 2P1.

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April 29: Dalhousie University Alumni Reception in Toronto. For further information, contact: Kate MacDonald, Alumni Affairs and Continuing Education, Faculty of Dentistry, Dalhousie University, Halifax, NS B3H 3J5. (902) 424-1674.

May/Mai 1989

May 1-3: 9th International Dental Meeting in Nice, France. For more information, contact: Mrs. Schmitt, 37, av Villermont, 06000 Nice, France. Tel: (33) 93 98 26 09.

May 3-7: American Association of Endodontists in New Orleans. Contact: Ms. Irma S. Kudo, 211 E Chicago Ave, Suite 1501, Chicago, ILL 60611, USA.

May 6-9: Practical Dentistry: A Look Into the 90's 119th Annual Session of the Wisconsin Dental Association. For registration information, please write or call: Wisconsin Dental Association, 633 W Wisconsin Ave, Milwaukee, WI 53203, (414) 276-4520.

May 7-12: Academy of Denture Prosthetics in Corpus Christi. Information: Dr. Charles C. Swoope, 1515 116th Ave NE, Suite 303, Bellevue, WA 98004, USA.

May 8-12: American Academy of Cosmetic Dentistry in St. Thomas, VI. Contact: Ms. Barbara Joe Zoeller, 2709 Marshall Ct, Madison, WI 53705, USA.

May 12-14: Academy of Dentistry for the Handicapped, American Society for Geriatric Dentistry, American Society of Hospital Dentists in Chicago. For information, contact: Dr. Paul Van Ostenberg, 211 E Chicago Ave, Suite 1616, Chicago, ILL 60611 USA.

May 13: Update on the Management of Periodontitis sponsored by the Alberta Academy of Periodontics in Calgary, Alberta. Contact: Alberta Academy of Periodontology, 1333-8th St S.W., Suite 505, Calgary, Alberta T2R 1M6.

May 16-20: 65th Congress of the European Orthodontic Society in Würzburg, West Germany. For details, contact: Prof. Dr. Emil Witt, Universitätszahnklinik, Pleicherwall 2, D-8700 Würzburg, West Germany.

May 21-26: 10th International Conference on Oral and Maxillofacial Surgery in Jerusalem. Contact: Dr. Eli Ronen, Chairman, Organizing Committee, 10th International Conference on Oral and Maxillofacial Surgery, PO Box 5006, Tel Aviv 61500, Israel.

May 24-27: Swiss Dental Association Convention in Switzerland. Contact: Dr. Pierre Spahn, 51, av du Casino. 1820 Montreux, Switzerland.

May 27-30: American Academy of Pediatric Dentistry in Orlando, Florida. Details: Dr. John A. Bogert, 211 E Chicago Ave, Suite 1036, Chicago, ILL 60611, USA.

May 28-June 1: Les journées dentaires du Québec 1989 at the Montréal Convention Centre. For information, please contact: Chantal Bally, ODQ, 625 René-Levesque West, 5th Floor, Montréal (Qué) H3B 1R2. (514) 875-8511.

May 29-June 2: Periodontal and Prosthetic Treatment in Advanced Cases in Malmö, Sweden. For details, contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmö, Sweden.

June/Juin 1989

June 1-3: 2nd International Symposium on Osseointegrated Dental Implants in Philadelphia, PA. For registration information, contact: University of Pennsylvania, Continuing Dental Education, 4001 Spruce St, Philadelphia, PA 19104 USA.

June 1-4: Annual Meeting of the Canadian Association of Dental Consultants in Toronto, Ontario. Contact: Dr. Ronald G. Wiler, 535 Park St, Suite 3, Kitchener, Ont N2G 1N8.

June 1-5: 12th Congress International Association of Dentistry for Children in Athens, Greece. For details, contact: Secretariat, 12th Congress IADC, 41, Skoufa Str, Athens 106 73, Greece.

June 4-9: V International Conference on AIDS in Montréal, Québec. For more information, write to: V International Conference on AIDS, Secretariat, Kenness Canada Inc, 1010, rue Ste-Catherine ouest, bureau 628, Montréal (Québec) H3B 1G7.

June 5-9: XXV Congreso nacional y V International de Odontología y Estomatología in Malaga, Spain. For information, contact: SITECC-SIASA, c/o Manuel del Palacio, 16, Edif. Costa Bella, Apto. 3, 29017 MALAGA, Spain. Tel: 29 29 20 - 29 41 43.

June 5-9: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmö, Sweden. Contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmö, Sweden.

June 7-14: American Dental Hygienists' Association in Boston. Contact: Ms. Kathy Gallagher, 444 N Michigan Ave, Suite 3400, Chicago, ILL 60611, USA.

June 8-11: Alberta Dental Association Convention in Red Deer, Alberta at the Capri Centre. Theme "Unity in Dentistry". Registration: Dr. Barry Fleming, Highland Green Shopping Centre, 6315 Horn St, Red Deer T4N 6H5 Tel: (403) 346-8443.

June 10-16: ACFD/CADR Biennial Conference on Dental Education & Research in London, Ontario. For further information, contact: Mrs. Stella Taylor, Executive Assistant, ACFD, #109 - 1815 Alta Vista Dr, Ottawa, Ont K1G 3Y6. (613) 738-7732.

June 19-23: 14th International Congress of Gerontology in Acapulco, Mexico. For details, contact: Congress Secretariat, Joutla No. 91, Tlalpan CP 14090, Mexico D.F., Mexico.

June 26-30: XII Congreso de la Federación odontológica latinoamericana y XI Congreso nacional de Estomatología in Havana, Cuba. Contact: International Conference Center, Apartado 16046, Zona 16, Havana, Cuba. Tel: 20-4653.

June 27-30: 95th Annual Meeting of the American Dental Society of Europe in Deauville, France. Details: Dr. Clive R. Debenham, 1 Harley St, London W1N 1DA, England. 01.580 2294.

June 28-30: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Wilma E. Motley, 18952 Blackhawk St, Northridge, CA 91326, USA.

June 28-July 1: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Mrs. D. Scanlon, 53 Ariel Crt, Nepean, Ont K2H 3J1. (613) 728-8730.

June 28-July 1: International Association of Dental Research & International Conference on Oral Biology in Dublin, Ireland. For information, contact: Ms. Eloise Bredder, Administrative Assistant, American Association of Dental Research, 1111 - 14th St NW, Suite 100, Washington, DC 20005 USA.

June 28-July 5: Bermuda Dental Association Convention. Limited attendance convention. Contact: Dr. Bob Brandon, 85 Lonsdale Dr, London, Ont N6G 1T4. (519) 657-3368.

June 30-July 2: Dentistry 89 in Oxford, England. For details, contact: Linda Bridges, Conference Office, British Dental Association, 64 Wimpole St, London W1M 8AL. Tel: 01-935 0875.

June 30-July 2: Florida National Dental Congress in Orlando, Florida. For information: Florida National Dental Congress, 3021 Swann Ave, Tampa, FL 33609, USA.

July/Juillet 1989

July 14-19: Academy of General Dentistry in New York. Contact: Ms. Debbie Jepsen, 211 E Chicago Ave, Suite 1200 Chicago, ILL 60611, USA.

August/Août 1989

August 9-13: Dental Manufacturers of America, Inc. Contact: Ms. Kathleen A. LeMar, 1118 Land Title Bldg, Philadelphia, PA 19110, USA.

August 10-13: American Academy of Esthetic Dentistry in Pebble Beach, CA. Contact: Ms. Cheryl Kraus, 211 Chicago Ave, Suite 948, Chicago, ILL 60611, USA.

August 18-20: 5th Annual Symposium, ACOI: Implant Surgery and Prosthodontics in Oakland, California. Information: Margaret M. Jackson, International Congress of Oral Implantologists, PO Box 2277, Grand Central Station, New York, NY 10163, USA. (201) 783-6300.

August 21-25: 18th North Queensland Dental Convention in Cairns, Australia. For details, contact: Dr. Peter Martin, Director, 18th North Queensland Dental Convention, PO Box 388, Cairns 4870, Australia.

August 27-30: Canadian Dental Association Convention in Vancouver, British Columbia. For more information, contact: Miss Leila Chatterjee, Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6 Tel: (613) 523-1770.

August 28-30: International Conference on Blood-borne Infections in the Workplace in Stockholm, Sweden. Sponsored by WHO, ILO and NIH (USA). Abstracts invited - deadline March 31. Contact: CONGREX AB, PO Box 5619, S-114 86 Stockholm, Sweden, ATTN: Catharina Oström.

September/Septembre 1989

September: New Zealand Dental Association Convention in Napier, New Zealand. Contact: Dr. DG Arnott, 30 Munro St, Napier, New Zealand.

September: 27th Annual Convention of Iranian Dental Association and 7th International Dental Exhibition in Tehran. Contact: Dr. Ezatollah Khamessi, Iranian Dental Association International Section, PO Box 14155-3695, IR-Tehran 14, Iran.

September 2-8: 77th Annual World Dental Congress, FDI, in Amsterdam, The Netherlands. Congress Secretariat, c/o Organisatie Bureau Amsterdam bv, Europaplein 12, 1078 GZ Amsterdam, The Netherlands. (31) 20-5491212.

October/Octobre 1989

October 5-8: IX National Dental Congress of Asocia-cion Odontologica Dominicana in Santo Domingo. Contact: IX Congreso Nacional de Odontologica, Apartado Postal 1002, Santo Domingo, Dominican Republic.

October 11-15: American Academy of Implant Den-tistry in Scottsdale. Contact: Mr. John P. Winiewicz, PO Box 2002, Abington, MA 02351, USA.

October 24-27: American College of Prosthodontists in Tuscon. Contact: Ms. Linda Wallenborn, 1777 NE Loop 410, Suite 904, San Antonio, TX 78217, USA.

October 24-27: 3rd International Medical, Hospital and Dental Equipment and Facilities Exhibition in Bangkok, Thailand. Contact: Elsa Wong, SHK Inter-national Services Ltd, 22/f National Mutual Centre, 151 Gloucester Rd, Hong Kong, 89587 SHKIS HX.

October 25-28: American Academy of Periodon-tology in Washington, DC. Contact: Ms. Jean Pierson, 211 Chicago Ave, Suite 1400, Chicago, ILL 60611, USA.

October 27-28: International Congress for Oral Implantologists in New York. Contact: Ms. Margaret

Jackson, 248 Lorraine Ave, 3rd floor, Upper Montclair, NJ 07043, USA.

October 27-31: American Institute of Oral Biology in Palm Springs. Contact: Dr. Philip Boyne, Dept of Surgery, School of Dentistry, Room 3306, 24777 University St, Loma Linda, CA 92350, USA.

October 30-November 1: American Academy of Maxillofacial Prosthetics in Tuscon. Contact: Dr. Gregory Parr, MCG/School of Dentistry, Dept of Prosthodontics, August, GA 30912, USA.

October 30-November 3: American Dental Trade Association in Maui, Hawaii. Contact: Mr. Nikolaj Petrovic, ADAT, 4222 King St, Alexandria, VA 22302, USA.

October 30-November 3: 107th Annual Meeting of the American Dental Trade Association in Maui, Hawaii. Contact: Nikolaj M. Petrovic, CAE President & Chief Executive Officer, American Dental Trade Associa-tion, 4222 King St, Alexandria, VA 22303 USA.

October 30-November 5: International College of Dentists in Honolulu, Hawaii. Contact: Dr. Richard Schaffer, One Metro, 51 Munroe St, Suite 1501, Rockville, MD 20850, USA.

November/Novembre 1989

November 4-7: 130th Annual Session of the American Dental Association in Honolulu, Hawaii. Contact: Office of International Affairs, American Dental Associa-tion, 211 E Chicago Ave, Chicago 60611 USA.

November 15-18: VI Congreso Internacional de Estomatologia y X Congreso Nacional de Odontologia in Lima, Peru. Contact: Dr. Ramon Castillo, President de los Congresos, Alfredo Salazar 583, Of. 102, San Isidro, Lima, Peru.

Obituaries/

Nécrologie

Heidgerken, George: A graduate of the University of Toronto in 1922, Dr. Heidgerken practised dentistry in Humboldt, Saskatchewan, for more than 50 years. He was a Life Mem-ber of the College of Dental Surgeons of Saskatchewan and the Canadian Dental Association.

Holt, Sidney W.: at 92. A graduate of the Royal College of Dentistry, Toronto, in 1927, Dr. Holt con-ducted a long-time practice in Lloyd-minster, Saskatchewan. Prior to his dental career, he had been a pilot in the R.A.F. during the First World War and a schoolteacher in Cardston, Alberta.

Matheossian, Vahan: Born in 1899, Dr. Matheossian was a grad-uate of the University of Montréal School of Dental Medicine in 1933. He conducted a practice in Out-remont, Québec.

McCutcheon, James O.: Born in 1898, Dr. McCutcheon was a grad-uate of the Royal College of Dentists of Ontario, Toronto, in 1917. He

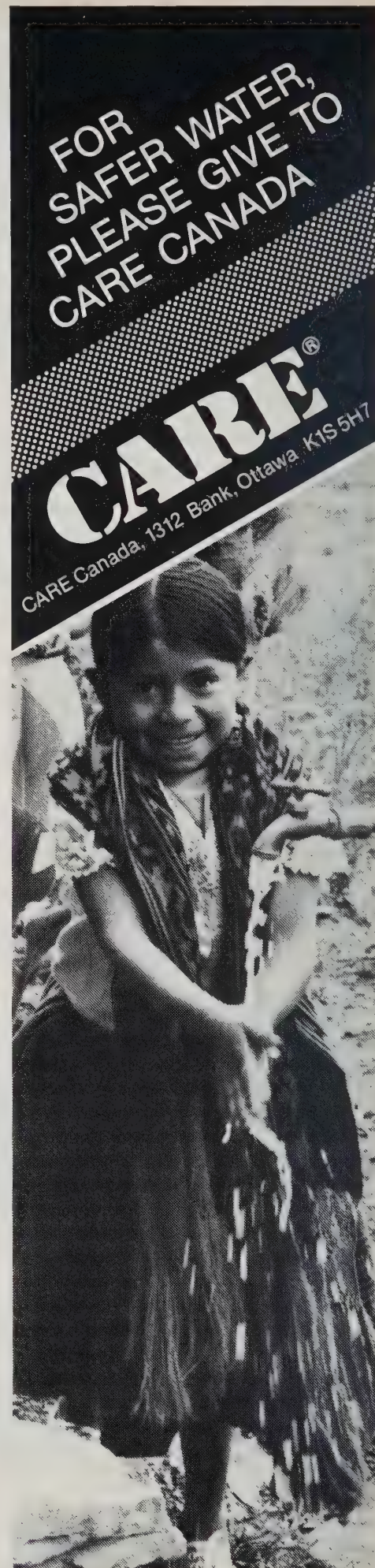
conducted a long-time practice in London, Ontario.

Paré, Marius: Né en 1922 et diplômé de la Faculté de médecine dentaire de l'Université de Montréal en 1949, le D^r Paré exerçait sa profession à Montréal.

Perreault, Léo Paul: Né en 1924 et diplômé de la Faculté de médecine dentaire de l'Université de Montréal en 1949, le D^r Perreault exerçait sa profession à Ville les Saules, au Québec.

Starr, R.M.: Born in 1934, Dr. Starr was a graduate of the University of Toronto's school of dentistry in 1959. He conducted a dental prac-tice in Ajax, Ontario.

Wilkins, George S.: Dr. Wilkins, a graduate in dentistry from the University of Manitoba in 1967, practised in Vancouver, British Columbia. He enjoyed more than one career. In addition to dentistry, he had been a journalist and a stockbroker.



Offices and Practices

NORTHWEST TERRITORIES—Yellowknife: General dental practice established ten years for sale. Refurbished '85. P.O. Box 2615, Yellowknife, NWT X1A 2P9, (403) 873-8505 (W) or 920-2577 (H).

BRITISH COLUMBIA: PRACTICE FOR SALE. Established, 8-year-old quality practice located in Vancouver's west end fashion district. Three full operatories, with excellent staff and hygiene recall system. Steady new patient flow, with 95 per cent insured. Good gross with opportunity for growth. Please call Dr. Kary Taylor at (604) 687-8319 or write to 509 - 1270 Robson St, Vancouver, BC V6E 6Z3.

BRITISH COLUMBIA—Kootenays: Must sell. High quality, general family practice established 11 years. Solid patient base with very active recall program. Good gross with low overhead. The area offers outstanding recreation, education and family living. Reply to CDA Box 2421.

BRITISH COLUMBIA—Parksville (Vancouver Island): Established 12-year-old general practice has me working more hours than I wish, for more income than I require — Time to retire and enjoy this wonderful area more fully. Make my day — and yours. For details (604) 468-7736 evenings.

BRITISH COLUMBIA—Vancouver: RETAIL DENTAL PRACTICE IN NEW 900,000 sq ft SUPERMALL — Beyond busy — good annual gross. Call (604) 224-9100 evenings. Won't last. \$10,000 (refundable) certified deposit required to view.

BRITISH COLUMBIA—Vancouver Lower Mainland: Busy mall location, 6 operatories, 2 fully-equipped. In 1200 sq ft office. New leasehold and equipment, low rent and long-term lease. Phone (604) 521-1454 evenings.

BRITISH COLUMBIA—Victoria: Purchase or partnership for well-established, high-quality general practice with good

recall program. Modern, well-equipped three operatories. Located in professional building adjacent two major shopping centres. Good growth potential. Dr. John Q. Fraser, 3909 Sandell Place, Victoria, BC V8N 5R4, (604) 721-0091 (evenings).

ALBERTA: Quality rural practice for sale in the beautiful heart of lakeland, North-eastern Alberta. Long established, owner wishes to retire and enjoy. Three operatories, two fully-equipped, third (prosthetic) room partially equipped. Hospital privileges. Dental equipment (mine) in hospital O.R. Private office & staff room. All rooms have generous space. Shared administration with other dentist. Cost \$45,000. \$15,000 down, owner will carry balance at prime + 1 per cent. Business (403) 645-4495. Home (403) 645-2584.

ALBERTA—Brooks: Practice available immediately. Dentist retired but owns building. Four operatories. Some older equipment. Terms negotiable. Contact: Dr. C.T. McCune, PO Box 250, Brooks, ALTA T0S 0J0, phone (403) 362-2657.

ALBERTA—Calgary: Established dental practice for sale in modern, downtown professional building. Two well-equipped operatories utilized by 2 practitioners with high income and low overhead. Combined endodontic practice with a good referral base. Both practitioners are retiring and leaving the city, however will ensure a smooth transition. Respond to CDA Box 2436.

ALBERTA—Calgary: Family dental practice for sale. Located in the major shopping centre's professional building. One owner for 22 years. Retiring. Call days before 3 p.m. (403) 255-6926. Evenings (403) 255-7876.

ALBERTA—Calgary: Retail dental office for sale in enclosed mall with great walk-by traffic. Office opened in August 88 and has shown excellent productivity. Please call Dr. Bob Ronaghan or Dr. Phil Louie at (403) 235-3888.

ALBERTA—Red Deer: For sale. Well-established dental practice. Three operatories with 2 extra for expansion. Reasonably priced. Phone (403) 346-3510.

ALBERTA—St. Paul: Well-established 27-year-old practice for sale. Exceptional opportunity with three operatories — 90 per cent insurance. Priced to sell. Reason for selling — health problems. Very good location in excellent trading area. For details, contact: (403) 657-3456.

SASKATCHEWAN: Very busy, family-oriented practice for sale in small Saskatchewan city. Four fully-equipped operatories, including panelipse. Large patient base makes it suitable for 2 new graduates or 1 experienced dentist. Very reasonable selling price. Reply to CDA Box 2420.

SASKATCHEWAN: Why work extended hours? 5000 patients waiting for you here. Owner leaving country July 1, 1989. Must sell family practice. Well-equipped, modern office; 2300 sq ft packed with dental equipment, private office, staff room. 100 per cent financing. Walk in and go to work now! Call today (306) 463-2600.

SASKATCHEWAN: For sale or lease established rural practice. Four chairs, 1600 sq ft, 50 miles south of Saskatoon. 2000 adults, 500 children's dental plan. Experienced CDA and dental therapist on staff. Attractive town of 2000 in mixed farming area. Housing available. Excellent schools and recreation. Phone (306) 867-8226 Outlook, Sask or 856-2014 evenings.

SASKATCHEWAN—Davidson: Fully-equipped, 3 chair dental practice in attractive new building. All supplies, etc. in place. Trained staff in area. For immediate sale. Dentist entering post-grad studies. Phone now for details (306) 693-0755. Fantastic opportunity.

SASKATCHEWAN—Regina: General practice for sale. Very reasonable terms. Low overhead, office expenses shared with another dentist. (306) 525-5611 days, (306) 545-3111 evenings and weekends.

SASKATCHEWAN—Saskatoon: New Endo practice. Spacious, bright office. Only full-time endo practice in a province of 1 million. Good referral base. Dental

college in city. Reasonable price.
(306) 244-6121.

SASKATCHEWAN—Saskatoon: Bright, spacious 2 operatory office. Brand new in new building. Everything three months old. Excellent price and location. Owner moving in June. Phone (306) 244-6121 or 665-0882.

MANITOBA: Busy general family practice. Good opportunity for experienced dentist or two new graduates. Easy commuting from Winnipeg. High gross, low overhead. Excellent staff with many years experience. Three well-equipped operatories. Practice established for 15 years in ideal location for area. Phone (204) 452-9986 or 261-4206.

NORTHERN MANITOBA: Very busy, modern, 2-man office for sale. Five fully-equipped ops, computerized, well-established. Growing city of 17,000 + with high disposable income and high insurance. Excellent opportunity for work and play in beautiful lake country. Ski, hunt, fish and golf on your doorstep. Phone (204) 778-5202 evenings.

ONTARIO: PERIODONTIST OR ENDO-DONTIST WANTED. To share existing office with Oral Surgeon in Georgetown. Call Dr. J. Levitz (416) 279-9971.

ONTARIO—Ottawa: Dental office space available in downtown location. Landlord will provide generous leasehold improvement package. Call (613) 234-4386 daytime.

ONTARIO—Ottawa: Periodontist wanted for cost sharing arrangement with other specialist in modern, fully-equipped office. Excellent location. Please reply to CDA Box 2441.

ONTARIO—Toronto: Mixed general and specialty dental practice in downtown core seeks partner with existing practice or referral base to share space and overhead on full- or part-time basis. Existing facility is 900 sq ft in a professional building with two operatories (optional third). Inquiries (416) 967-5948 (days) 849-1283 (evenings).

QUÉBEC—Montréal: Fully-equipped 2 operatory dental office for sale. This modern office is in excellent condition. Situated in the Côte des Neiges area one block from the metro. Excellent patient flow. This office is priced right for immediate sale or within four months. For information, phone (514) 737-2251.

NOVA SCOTIA: Exceptional Opportunity. Very busy, modern practice available in beautiful town on South Shore of Nova Scotia. Well-established, family-oriented, excellent income. For details contact: 6452 Vienna St, Halifax, NS B3L 1S8 (902) 454-9027 or 455-3748.

NOVA SCOTIA—Lunenburg: Practice for sale in modern medical-dental centre. Includes two fully-equipped operatories and cost-shared facilities such as spacious reception, hygiene, lab, panoramic x-ray facilities. Ideally located next to hospital and close to schools, shopping area and recreation facilities including swimming, golfing, boating, tennis, etc. Just one hour from Halifax. Please reply to: Robert Murray, DDS, P.O. Box 370, Lunenburg, N.S. B0J 2C0 or phone (902) 634-8880 (O) or 624-9966 (H).

NOVA SCOTIA—Sackville: Two year old practice in mall priced for immediate sale. Located in growing suburban area. May stay on as associate for transition. Phone (902) 466-5484 (home).

Associateships Available

YUKON—Whitehorse: Associate required for a very busy multidiscipline dental practice. Excellent opportunity for a young progressive dentist. Contact Dr. R. Pearson (403) 668-3152.

YUKON—Whitehorse: Full-time associate required to assume well-established, quality general practice. Current associate will be taking indefinite maternity leave in Spring 1989. Good opportunity for young, conscientious dentist interested in high-quality, total patient care. Practice in a friendly, relaxed atmosphere close to the finest wilderness area in Canada. Future partnership opportunities available for the right individual. Phone: Chuck Hazen (403) 668-6707 collect or write: 5110 - 5th Ave, Whitehorse, Yukon Y1A 1L4

BRITISH COLUMBIA—Dawson Creek: Full-time associateship available in fixed and/or removable prosthodontics or general practice. Unique office setting in the foothills of British Columbia's Rockies; optimum outdoor and family rearing location. Phone (604) 782-3939.

BRITISH COLUMBIA—Fraser Valley: Part-time associateship with long-term

view available in well-established family practice. Applicant must be conscientious with a prerequisite of three years experience in general practice. Please reply in confidence to CDA Box 2435.

BRITISH COLUMBIA—Vancouver: PEDIATRIC ASSOCIATE required for busy quality practice. Opportunity for partnership possible. Please reply in confidence to CDA Box 2444.

BRITISH COLUMBIA—Vancouver: Full-time associate required for dental office in downtown Vancouver. Please call (Tuesday to Saturday) Dr. Ng or leave message with receptionist at (B) (604) 873-8117. Experience preferred.

BRITISH COLUMBIA—Victoria: Full-time and part-time associates required for a new, modern mall practice in Victoria, BC. Partnership/purchase opportunity available. For more information, contact: Dr. Thakore or Dr. Mehta at (604) 585-4044 or 294-0846.

ALBERTA—Edmonton: ASSOCIATE WANTED — In extended-hour practice with opportunity for buy-in potential in future. Excellent opportunity for an ambitious quality-oriented practitioner. Contact Dr. Brian Pisesky at (403) 487-8793.

ALBERTA—Red Deer: Associate needed for a modern and well-established pediatric dentistry practice in Central Alberta. Red Deer is a thriving community with superb cultural, recreational facilities with a growing industrial base. My practice provides all phases of routine pediatric dental care, including orthodontic treatment and treatment under general anesthetic at the Red Deer Regional Hospital Centre. This is a unique opportunity for an ambitious and dynamic doctor. Partnership could be discussed. Please call: Dr. Vinay Chafekar (403) 347-5224.

SASKATCHEWAN: Extreme southeast corner of the province. Be fully booked from day one and enjoy total autonomy in your practice. An ideal opportunity for a young grad to build up your assets quickly. Buy-in option available. Contact: Dr. Clay Johnstone at (306) 453-6346.

ONTARIO—London: Full-time Associate required for very busy, established general practice. Partnership opportunity available. Call Barbara at (519) 455-2551.

ONTARIO—Ottawa: ASSOCIATE REQUIRED Large group practice requires

a competent associate to take over an existing practice. Please call Dr. John Connelly at (613) 728-1874.

ONTARIO—St. Catharines: Associate required for modern store-front location. Seeking dynamic, team-oriented individual to join established, highly preventative, general practice with motivated, congenial staff and buy-in potential. In scenic Niagara, minutes from excellent golf and sailing facilities, 20 minutes to US border and 1½ hours from excellent skiing. Reply in writing to CDA Box 2427.

NOUVEAU-BRUNSWICK—Campbellton: Dentiste bilingue pour joindre pratique moderne, surchargée. Cinq salles opératoires, hygiéniste, panorex, revenus très intéressants en 35 heures/semaine. De jour, clientèle avec assurance. Opportunité d'être associé à peu de frais. Téléphone André (506) 759-8114 après 18 heures.

Auxiliaries

BRITISH COLUMBIA: DENTAL HYGIENIST. Progressive office in Fraser Valley seeks an exceptional person for full or part time position. Enjoy working with our dedicated, yet fun-loving group! We encourage personal development through continuing education. Come enjoy the limits of your profession with us. We offer an attractive wage and benefit package. Please call or write Corrie at (604) 792-5558 (collect). For details: #3 - 9331 Mary St, Chilliwack, BC V2P 4H3.

P.E.I.: DENTAL HYGIENIST Our dental team is seeking an energetic hygienist with a warm personality for a permanent position in our modern practice located in Montague (close to Charlottetown). Emphasis is placed on open communication with our patients and co-workers. Excellent hours and benefits; salary negotiable. For further information, call Karen or Lise at (902) 838-3198.

Opportunities Available

BRITISH COLUMBIA—Prince George: Large solo practice available in a group cost-sharing setting. Facilities are up-to-date and the office is computerized. The practice is both successful and enjoyable. Call Elaine David. Monday-Friday —

Daytime (604) 562-5551; Evenings or weekends (604) 562-1927.

ALBERTA: Practice For Sale in Alberta. Large number of active patients. Low asking price. Will consider associateship with aim of future purchase. Please reply to CDA Box 2442.

ALBERTA—Calgary Area: Qualified in Core-Vent Implantology? Looking for lucrative practice? Associate leading to ownership, lots of work waiting. Reply to CDA Box 2434.

ALBERTA—Edmonton: I am searching for a hardworking, ambitious, quality-oriented dentist to practise in a dental clinic situated with a busy walk-in medical clinic. This dental office has all new equipment, including Pan. This doctor should have the desire to succeed independently and reap the rewards in one year with a possibility of partnership. Are you that dentist? Please contact (incl résumé): Dr. N. Manji, 9710 - 182 St. Edmonton, ALTA T5T 3T9 (403) 489-1799.

ALBERTA—Hythe: Dentist wanted for fully-equipped clinic situated in medical building. Other occupants include 2 physicians, health unit and a pharmacy. Hythe is an agricultural centre serving a population of 4700. Located in northern Alberta on highway no. 2, midway between the cities of Dawson Creek and Grande Prairie. Excellent recreational area and a full range of community facilities are available. Town has a new hospital adjacent to medical building. For complete information, contact: Dr. Paul Keith, PO Box 280, Hythe, AB T0H 2C0 or telephone (403) 354-8255.

ONTARIO—Ottawa: Modern, well-established periodontal practice requires a full-time associate with opportunity for partnership. Candidate should be a certified periodontist with NDEB certificate and membership in the Royal College of Dental Surgeons of Ontario. Call Dr. J. Kershman (613) 738-1108 or 521-8161.

ONTARIO—Ottawa Valley: Family practice for sale — established 22 years. Owner plans retirement and is willing to associate for specified period. Low overhead — combined residence available too. Hospital privileges — excellent recreation area, present staff willing to continue. Two operatories, 900 sq ft, air conditioning. Please reply to CDA Box 2438.

ONTARIO—North Toronto: Position

available immediately for a Paediatric dentist with Ontario certification in a modern, well-established private practice. Full range of dental care provided from preventive to orthodontic services; well care and special needs (mentally and physically compromised) children and adolescents. Associateship with future prospects for partnership or cost sharing arrangement. Please reply to CDA Box 2426.

ONTARIO—Toronto: ANESTHESIA ASSOCIATE required for general dentistry practice in Willowdale. Candidate must have anaesthesia/sedation background. Modern five operator, team approach. Partner retired. Position available immediately. Please contact: Dr. J. Mel Hawkins, 4800 Leslie St, Leslie Professional Building. (416) 498-8484.

ONTARIO—Toronto: ORAL SURGERY for sale. High traffic, 2 ops, 1 exam room, full-scope practice, modern facilities. Reply to CDA Box 2439.

QUÉBEC—Montréal: Dentiste bilingue demandé pour travailler à pourcentage sur Côte des neiges, coin Lacombe. Édifice caisse populaire à Montréal (514) 342-1742. Bilingual dentist required to work percentage. Côte des neiges, corner Lacombe, Caisse Populaire Building in Montréal (514) 342-1742.

Opportunities Wanted

BRITISH COLUMBIA—Vancouver Area: Enthusiastic, caring dentist seeks well-established, progressive, quality practice with potential for future growth. Will consider associateship with direct view to purchase and/or purchase with vendor remaining part-time. Please reply in confidence to CDA Box 2431.

CANADA: EXPERIENCED CERAMIST SEEKS EMPLOYMENT Swiss dental technician, 35 yrs, highly qualified in all types of ceramic restorations, attachments and milled work would like to live and work in Canada. My command of English is perfectly sufficient to cope with everyday demands, and my mother tongue is French. I have also been employed by a leading dental manufacturer as a demonstrator and consultant. Available — August 1989. Genuine, long-term interest. Please send confidential replies to: FAX No. 011 49 2161 57 0632 (West Germany) or: CDA Box 2443.

Locums

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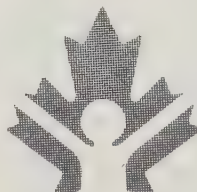
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But, what's this about eliminating the paper claim form? It's going to happen and it's going to happen sooner than most of us think, as we move into the era of Electronic Data Interchange or EDI. This is a process which will allow us to enter the necessary data into a terminal in our offices (the system will be developed to accommodate existing computer software packages) and have it flow straight through a central clearinghouse run by the CDA to the appropriate administrator of the patient's dental plan. We as dentists, through our Association, will have the proper safeguards and controls in place.

The cumulative databank which will be developed will be controlled by the profession. The plan administrators would receive only their own data, that is, the information they presently receive on paper. For those provinces which already have profiling systems in place, the necessary data would be readily available for release to the proper authorities. That way, dentists would control profiling, rather than insurance companies.

The information received from the data banks would be a fantastic tool for dentistry. Provincial associations would have all of the information which accurately reflects true practice patterns. This information will provide the associations with accurate knowledge of practice changes and trends and will be invaluable in formulating fee guides.

If claims administration is more efficient and cost-effective, then dental benefits become more affordable to more people. This is good for our patients and good for dentists. For the cynics who would say that the insurance companies will just increase their profits, the answer is that this is highly unlikely to happen. The market is just too competitive for this type of cost-saving not to be passed on to the plan purchasers.

EDI has to happen because there are too many advantages for all concerned. The Canadian Dental Association, through its Third Party Dental Plans Committee, has taken the initiative in this area to make sure that EDI comes to fruition in such a way that it benefits dentists and their patients. The future is happening now and it's leading to exciting times. Δ

*Bernard Dolansky, DDS, MSc
Third Party Dental Plans Committee*

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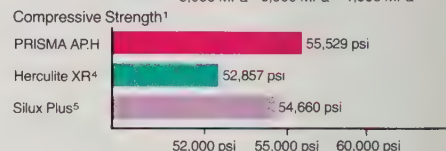
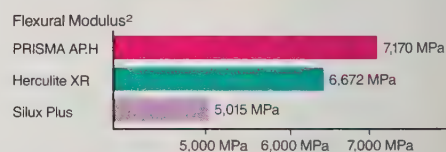
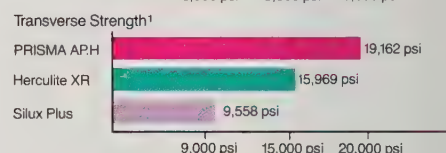
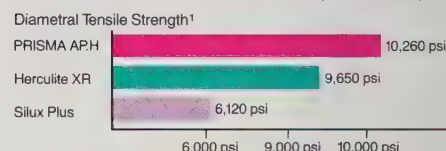
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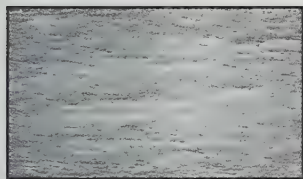
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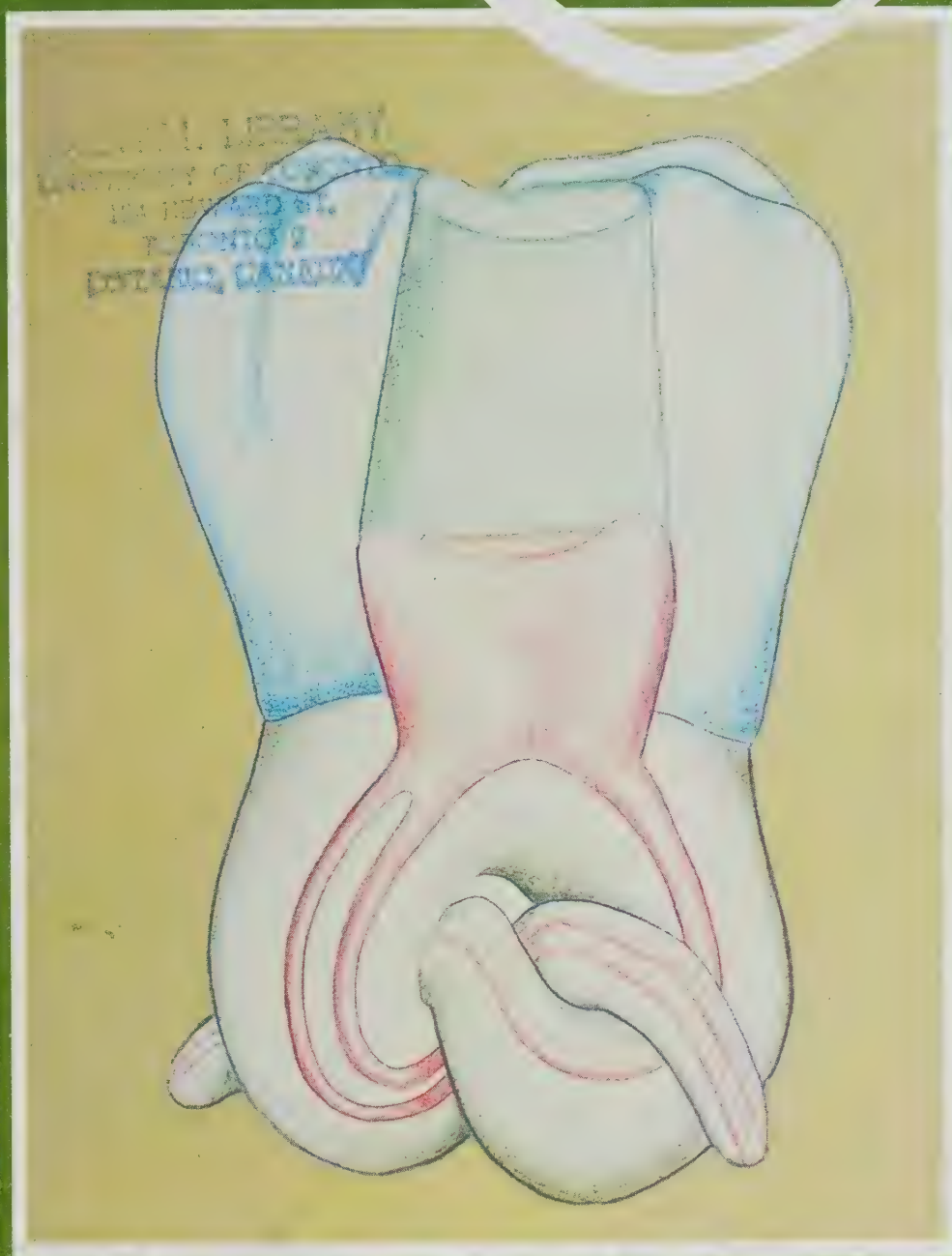
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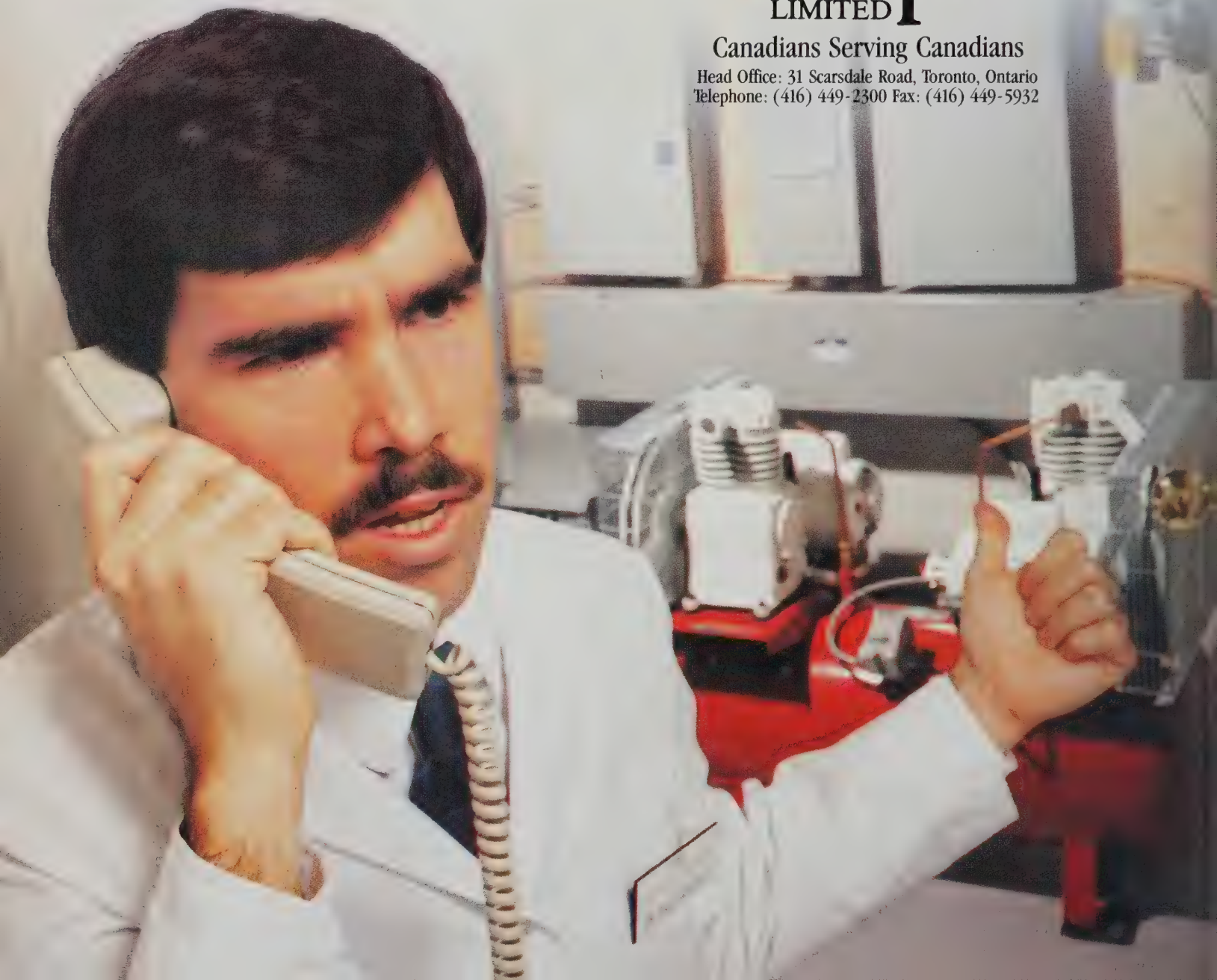
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Notice of change of address should be received before the 10th of the month, to become effective the following month.

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada — \$42; United States — \$44; all other — \$46. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted to the Journal.

ISSN0709 8936

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The Canadian Dental Association serves the dental profession — and through the profession the Canadian public — as the authoritative national voice and resource for dentists.

In cooperation with the provincial dental associations and affiliated organizations, CDA offers services, in both official languages, intended to support and advise all areas of dentistry and to represent, protect, promote and develop the interests of the dentist as ethical practitioner, professional, educator, student, researcher, business person, citizen and individual.

CDA recognizes a particular responsibility to contribute to the development of national positions and standards related to dentistry, dental education, dental research, dental equipment, dental materials and dental personnel.

CDA is dedicated to the principle that all Canadians should have the best oral health care it is possible to provide; it actively seeks input from and dialogue with governments, consumers and all those interested in dentistry to enable it to serve more effectively both its members and the Canadian public.



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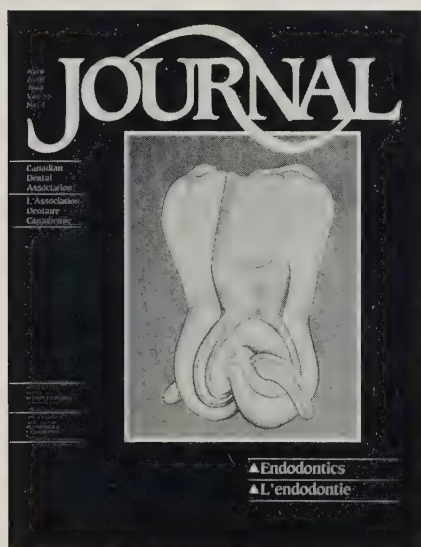
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Cover illustration: courtesy of Dr. Bernard Dolansky, Ottawa, Ont.

Endodontics



Confused about infection control?

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The amount of information generated today about infection control is overwhelming. To clarify the confusion, ignore the claims and focus on the facts.

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1. EPA Registration No. 46851-1

2. American Dental Association Council on Dental Therapeutics. Acceptance of (synthetic phenol) disinfectant for instruments and equipment JADA 110:394, 1985



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You Choose; What Will It Be?

Carl Miller, the former executive editor of The Wall Street Journal once said, "There are three kinds of people. Those who make things happen, those who watch things happen and those who have no idea of what is happening." It is a pretty safe bet that the dentists in Canada, being reasonably representative of the human race, will fall somewhere within those three categories.

The critical question will remain constant, "to which group will I belong?" Certainly, as creatures endowed with a free will and an intellect, dentists have the choice and decision to respond to Miller's pronouncement. Let there be no doubt, there will be heights of joy and tears of anguish within any of the three choices.

Choice number one, those who make things happen. They are in the minority. They are noticed at the annual meetings; they have read the reports, pondered the presented balance sheets and generally have done their homework. They are interested, they are concerned. They are willing, shy as they may be, to speak up and either render constructive criticism or contribute additional knowledge and background to a perplexing problem. They soon rise to leadership roles because they are willing to give of themselves to ease the plights of their fellow man. They would quietly smile if the rest of us suggested they become leaders in dentistry for "the fame and the fortune". All too quickly, at least in dental associations, once that leadership position is achieved, reality changes the perspective. There is no money to be made and the glory lasts for a very brief period.

An organization cannot exist without good leaders. No action would be initiated without their energy and drive. They are assailed by broadsides of criticism when things go wrong, but seldom praised when things go right. The rest of us can only be eternally grateful their decisions made things happen.

The other category, those who watch things happen, is a larger group. Often gravitating towards the back of the meeting room, (at least they turned out!), they have very little to say unless really aroused about a particular agenda item — usually something affecting them directly. It is obvious they are not leaders but they do possess some peripheral interest. They listen to debate, often whispering opinions to one another. They observe the proceedings and then participate in the democratic process of casting a vote. Their investment is risk-free. They contribute little and they receive little in personal satisfaction. They are willing to be the sideline spectators. Their true numbers will never really be known.

The third category, those who have no idea of what is happening, must be the saddest of all groups. Seldom seen at dental meetings, never participating in an association activity or decision, it is difficult to track their emotional events or response. Mercifully, their numbers are small. But the fact that they exist at all has to be worrisome. How can a united effort which is beneficial to both the profession and society be truly effective if a particular segment has no idea what is happening?

Indications are that the problems facing dental associations will only increase in the future. The individual dentist inevitably will have to choose a Carl Miller group. What will it be? Please check one of the following. . .

- ☐ I will make things happen
- ☐ I will watch things happen
- ☐ I have no idea what is happening

P. Ralph Crawford, DMD

Editor: Journal of the Canadian Dental Association

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The profession's self-image

Dentistry as a profession has only been regarded as such for slightly over 100 years, hence it is a young profession. Some aspects of professionalism are still evolving. It is in order then, for dentists as professionals in a specialized area of health care, to engage in some self-evaluation.

Early dentistry was crude and generally, highly unprofessional. The frontier dentist was always depicted as one who practised "street style" oral surgery. The practitioner in pioneer days was as rugged as his environment and earned dentistry the long-lasting stigma of being associated with pain. Even today, the humorist, cartoonist or punster feels he can most effectively depict pain by using a story about dentistry.

There was a time when dentistry was a trade, without recognized status in the health care community. It was only when the curricula in our dental schools were upgraded to include the basic sciences, and the optimum in dental clinical research and teaching, that dentistry's image began to improve.

Today, optimum dental health and its relationship and importance in the spectrum of general health is being stressed and is better understood by the general public. Oral health as a resource of our nation depends upon the profession of dentistry. Dentistry has achieved status as a respected health profession. We have been invited and welcomed into the health community because of the contribution the dental team makes to the overall general health of Canadians.

The image of dentistry that we are creating must encourage our patients and the general public to come to our offices, rather than be deterred by fear, misinformation or doubts. The message must be clear and simple — that early care means saving teeth, reduces comprehensive treatment, is less expensive, and conserves dental manpower.

And now, what are the current notions and opinions of the general public about dentists and dentistry? How prevalent is the fear and the spectre of agonizing pain?

Many of our colleagues believe we need to work at both self-image and the profession's public image. Building and upgrading the dental image is everybody's job. This should be our most important public relations activity. Public relations is what other people think about you, not what you think about others.

Dentistry is weak in this area. Good public relations emanate basically from our private offices and practices. Mass media approaches, through TV, radio, newspapers and magazines can be helpful in improving one's self-image. However, what really counts in building and preserving the image, is what is done chairside in the dental office, and within the community.

The image of the dentist as a caring health professional is of the utmost importance in maintaining public trust. You can do much to ensure that the integrity of the dental profession is maintained and nurtured.

It has been recognized that the scope and interest of the professional is at times too narrow. It should be broadened. We should not sit back, but work to develop a better self-image and more respect from the public, as a caring health professional. This image of an individual concerned about people in general would be enhanced by increased involvement in community and social programs.

Involvement in the community is viewed as the most powerful, public-oriented activity contributing to a professional's respect and success. Oral health professionals are no exceptions. They must become involved with charitable organizations, the arts, social issues, politics, youth and sports groups, and of course, with local, provincial and national levels of dentistry. This is how to improve our individual image and that of our profession.

Let us all heed the importance of the ingredients required for the enhancement of the profession.

We can create "Dentistry on Parade" across Canada.

The public will be impressed, influenced and responsive.

*Jack W. Niedermayer, BA, DDS,
President of the Canadian Dental Association.*

Highlights of the CDA's 1988 Gallup Poll

Canadians are getting the message — and acting on it

On April 1, 1985, the CDA launched the Dental Awareness Program, the largest commitment by organized dentistry to educate Canadians and to promote timely use of dental services. Since then, the program has achieved a great deal. It has won awards, created informative educational materials, generated millions of dollars in corporate support, and inspired increased provincial activity. The bottom line — and the challenge — has been to translate need into demand.

How are we doing? On the whole, we're doing well. At the outset of the DAP, the CDA conducted a poll of the dental health attitudes of Canadians 18 and over. In July 1988, a similar poll was conducted to track changes. What the latest poll tells us about Canadian dental attitudes is encouraging on many fronts. Here are some of the highlights.

Dental Visits

• Annual visits on the rise.

In 1985, 59.9 per cent of people reported visiting the dentist at least once a year. In 1988, that figure rose to 65.3 per cent — a substantial increase of 9.0 per cent.

This increase is encouraging. First, it suggests that Canadians are becoming more concerned about their dental health and aware of the importance of effective dental care and treatment. Second, this concern is translating into dental visits, which means a growth market for dental services.

• Highest in B.C.

Every region shows an increase in people who report visiting the dentist at least once a year, but British Columbia shows the greatest increase, from 57.8 per cent in 1985 to 73.4 per cent in 1988. Ontario is next, with 69.1 per cent in 1985, compared with 71.9 per cent in 1988.

The percentage who report annual visits is considerably lower in Atlantic Canada, Quebec and the Prairies, just under 59 per cent in all three. This does, however, represent an increase over 1985 when percentages ranged from

53.2 per cent in the Prairies to 54.7 per cent in Atlantic Canada.

• Age a key variable

Older people and, to a lesser extent, young adults seem to be getting the "good for life" message. Those aged 50 and over have the highest increase in annual dental visits — 42.2 per cent in 1985 compared with 49.1 per cent in 1988, an increase of 16.4 per cent. Next are 18-29 year olds, at 9.6 per cent.

• Dental insurance a factor

Dental insurance has a bearing on the frequency of dental visits. Of those with benefits, 75.6 per cent report visiting the dentist at least once a year. That compares with 55 per cent of those who are uninsured, and 65.3 per cent of the general population.

Gum Disease

• Vulnerability

The percentage of respondents who believe they will experience gum disease has remained virtually the same, just under 22 per cent.

In Quebec, however, significantly fewer people recognize vulnerability — 15.4 per cent in 1985 compared to 10 per cent in 1988, and a decline can be seen in every region with the exception of the Prairies. There, the percentage rose from 16.7 per cent to 26.2 per cent.

The above figures are considerably less than 90 per cent, the percentage of Canadians who will actually suffer from gum disease.

Clearly, when it comes to gum disease, Canadians are unjustifiably complacent. It is understandable why people with full dentures are complacent — that only 4.7 per cent of them are worried about future gum disease is to be expected. What is unexpected is that 24.3 per cent of those who have all their teeth do not recognize their vulnerability to gum disease.

Perhaps Canadians feel invulnerable to gum disease because they believe, mis-

takenly, that they are taking appropriate action to prevent it.

Or perhaps they are suffering from "the other guy syndrome," the knowledge that a disease is pervasive but the belief that it's the other guy who will contract it. Canadians who believe they are unlikely to suffer from gum disease are like heavy smokers who think they're immune to lung cancer, and obese hypertensives who think someone else will succumb to heart disease.

• Knowledge

It is no surprise that Canadians still point to brushing as the chief measure to prevent gum disease — 41 per cent identified it in 1988 compared with 35.7 in 1985.

More important, however, is the fact that more people are mentioning regular dental visits — 34.7 per cent in 1988 compared with 28.7 per cent in 1985, a 20.9 per cent jump.

Equally striking is the 28.6 per cent rise in the percentage who look to flossing — from 22.4 per cent in 1985 to 28.8 per cent in 1988.

All of this indicates how far Canadians have come since the inception of the DAP. They have moved beyond brushing to a broader awareness of the other essential components of good dental health.

• Action

More Canadians are brushing their teeth at least twice a day, from 49.1 per cent in 1985 to 52.2 per cent in 1988.

More significant is the increase in the percentage who report daily flossing, from 12 per cent in 1985 to 18.4 per cent in 1988.

The increase in frequency of dental visits has already been noted.

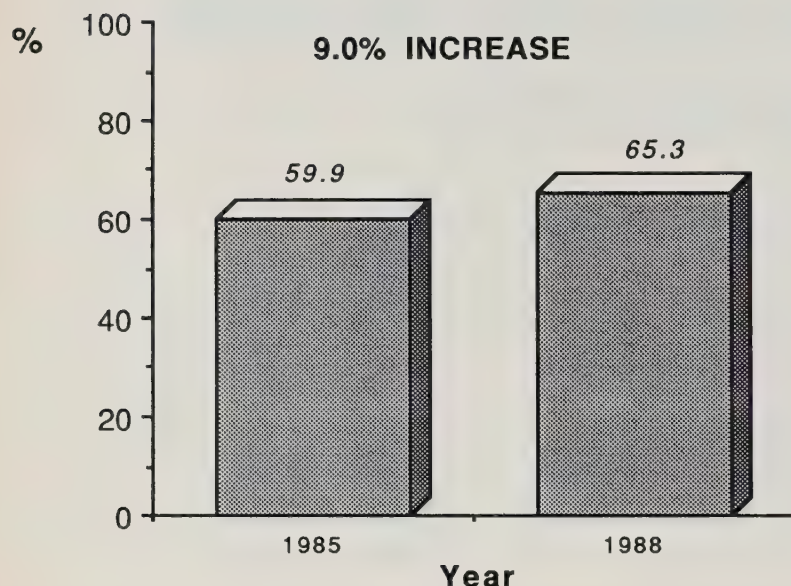
In short, awareness is translating into action.

Dental Team/Patient Relationship

• Loyalty

Most Canadians are loyal to a specific

DENTAL VISITS - More Than Once a Year



dentist. The survey shows just under 80 per cent of respondents either go to a specific dentist or would go if they felt the need for dental services. Quebec has the highest percentage who report going to a specific dentist — 86.0 per cent. Ontario and B.C. follow at 79.2 per cent and 77.6 per cent respectively, while at 71.2 per cent, Atlantic Canada has the lowest percentage.

The percentage is even higher for those who have dental insurance — 85.5 per cent — and for those who visit the dentist once a year — 91.7 per cent.

Dentists can only benefit from this trend. If greater dental awareness increases the number of those seeking dental services, it is likely these people will be interested in an ongoing relationship with a specific dentist.

• Information

Canadians look upon their dental team as the primary source of dental health information. According to the 1988 survey, 60.4 per cent of people receive information verbally from their dentist or hygienist; 15.9 per cent mention written material provided by the dental team.

Family and friends were mentioned by 23 per cent, while the media were cited by 19 per cent. (The figures in this category add up to more than 100 per cent because people were allowed to name more than one source.)

Canadians expect their dental team to provide information. But to be most effective, it must be the *right* information; information that reinforces positive behaviour and motivates people to practice good dental health.

• Recall

Eighty per cent of those with a specific dentist are reminded in some way of their next appointment. Recall practices are most common in British Columbia (91.4 per cent) and in large communities (84.2 per cent), and least prevalent in Quebec (70.5 per cent) and in communities under 10,000 people (75.4 per cent).

At first glance, these figures are impressive. But we shouldn't overlook the fact that 20 per cent of those with a specific dentist are not reminded of their next checkup. Neither are almost 10 per cent of those who visit the dentist most frequently (once a year or more). This means some dentists may be failing to convert the easiest market into regular dental consumers. They may also be failing to reinforce the necessity of continuing dental visits.

What methods are used to remind patients? The telephone was cited by 69.6 per cent; mail by 24.6 per cent; during/at the previous checkup by 20.9 per cent. (Again, the totals are greater than 100 per cent because respondents could identify more than one method.)

Reminders at the previous checkup are much more common in the Atlantic provinces than in the Prairies and Quebec (35.2 per cent to 13.8 per cent and 12.6 per cent and respectively.) Telephone reminders are most popular in Quebec (80.2 per cent), while in the Prairies most respondents reportedly receive their reminders by mail.

The results do not reveal the most effective method to remind patients. They do suggest, however, that dentists may not be taking full advantage of direct communication by telephone and at their offices. Patients need these reminders to reinforce the routine of dental visits.

Sore Points

• Less pain

Fewer people than ever associate going to the dentist with pain. In 1985, 51.1 per cent of respondents associated pain with dental visits. In 1988, the percentage had fallen to 39.3 per cent.

Fewer of those who visit the dentist annually are associating visits and pain — 45.2 per cent in 1983 compared with 33 per cent in 1988. Even more striking is the decreased percentage in medium-sized Canadian communities — from 54.4 per cent in 1985 to 33.2 per cent in 1988.

The Prairies show the greatest shift in attitude. In 1985, 59 per cent associated pain with dental visits. In 1988, it was down to 44.3 per cent.

The trends are encouraging because fear of pain has always been considered a deterrent to seeking dental service.

• Costs

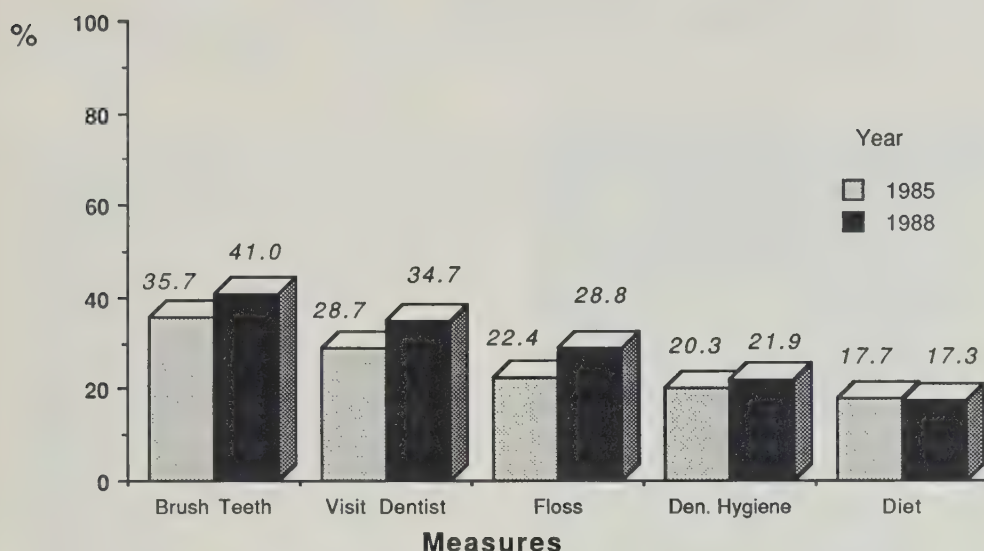
In 1985, 26.5 per cent of respondents found dental costs reasonable. By 1988, the percentage had dropped to 20.1 per cent.

Of all the age groups, those 50 and over were least likely to find costs reasonable — 17.7 per cent compared with 22.6 per cent for those 30-49 and 20.4 per cent for those 18-29. For those aged 50 and over, this is quite a slide from the 28.6 per cent who found costs reasonable in 1985.

At the same time it is important to consider that this age group (50 and over) has reported the highest increase in frequency of dental visits — from 42.2 per cent in 1985 to 49.1 per cent in 1988. The challenge for the dental team is to reinforce this behaviour.

From a regional standpoint, Ontario, Canada's wealthiest province, had the

Measures to Help Prevent Gum Disease — General



most sizable decline in the percentage who found costs reasonable — from 33.3 per cent in 1985 to 17.5 per cent in 1988. Next was Atlantic Canada, where 33.1 per cent found costs reasonable in 1985, while only 18.4 per cent found them so in 1988.

It is important to put these figures into perspective. In general, people think everything is too expensive. Food, clothes and home repairs are too costly and as for cars, well, the price is simply out of sight. Things cost more today than ever and, understandably, people resent it. Yet, this resentment does not deter them from buying whatever they need.

People are more likely to think prices reasonable when they understand the charges and perceive they are getting good value for their money. Most people do not understand dental charges. They

probably do not understand medical charges either, but, because the latter are covered by provincial health insurance, people, for the most part, are unaware of them. They are aware of what it costs for a cleaning, or a filling, or a root canal, and, to them, the charges seem high.

The Gallup Poll highlights are encouraging. The Dental Awareness Program has made some impressive inroads with Canadian people in the last three years and the momentum is definitely building. The results of the latest survey will help the DAP maintain and even improve its effectiveness by identifying those areas that require the greatest attention. As for the dental team itself, its greatest and most important challenge is to communicate more effectively with the patient and to place a greater emphasis on the nature and content of that communication. Δ

Former JCDA Editor named RCDS President

Dr. Wesley J. Dunn, founding dean of the Faculty of Dentistry of The University of Western Ontario, has recently been elected the 50th president of The Royal College of Dental Surgeons of Ontario, the 121 year old governing body of dentistry in the province.

Born and educated in Toronto, Dr. Dunn was graduated from the Faculty of Dentistry of the University of Toronto in 1947. He practised in Toronto until 1955 at which time he left to become the registrar of the College, a post he held until he was appointed dean of dentistry at Western in 1965.

Dr. Dunn has held several positions of responsibility in the dental profession: editor of the *Journal of the Canadian Dental Association*; chairman of the Council on Education of the Canadian Dental Association; president of the American Association of Dental Editors; president of the Association of Canadian Faculties of Dentistry; organizing secretary of the Canadian Society of Dentistry for Children; a founding director of Canadian Dental Service Plans Incorporated, and chairman of the Advisory Committee on Fellowships of the Canadian Fund for Dental Education.

He was a charter member of the Ontario Council of Health and chairman of its Committee on the Education of the Health Disciplines. He is a past chairman of the Ontario Council of University Health Sciences and a past governor of Women's College Hospital, Toronto. Dr. Dunn is a Fellow of the American College of Dentists and was a member of the College's Committee on Journalism from 1962 to 1965. He holds honorary fellowships in the Royal College of Dentists of Canada and the Academy of Dentistry International. He is an honorary member of the Hamilton Academy of Dentistry and was a 1988 recipient of the Barnabas W. Day Award of The Ontario Dental Association.

In London, Dr. Dunn has served on the boards of the London YMCA/YWCA, United Community Services and the Lung Association, in which latter organization he was, for two years, chairman of the Christmas Seals campaign.

Dr. Dunn is a professor in Western's Faculty of Dentistry and lives in London with his wife Jean. Δ

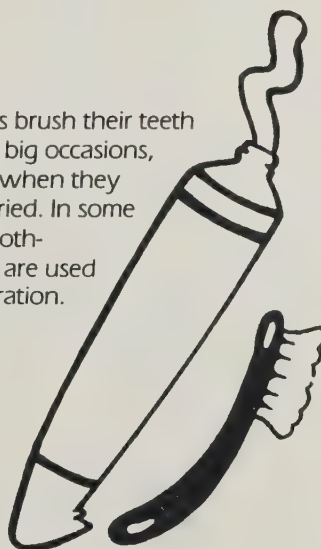
Did you know?

Now here's an opportunity!

According to a report in the October 1988 AGD/Impact, half of China's 1 billion people have rotten teeth and many have never used a toothbrush.

The China Consumer News says that even in the more well-to-do cities, only half of all houses have toothbrushes and a study in the Shanxi province showed full 95 per cent of all farm households do not own a toothbrush. Most Shanxi

peasants brush their teeth only for big occasions, such as when they get married. In some areas toothbrushes are used as decoration.



Dr. Gilles Dubé named CDA's Vice President

Dr. Gilles Dubé of Lachute, Québec, who has been a member of the Executive Council and the Board of Governors of the Canadian Dental Association since 1986, was named Vice President of the CDA at the Interim Board of Governors meeting in March. Under the revised structure of the Management Committee, Dr. Dubé will be the first dentist to serve in the capacity of Vice President.

The Management Committee will now consist of Dr. Kevin Roach, Chairman; Dr. Jack W. Niedermayer, Dr. Ron Markey and Dr. Dubé.

Dr. Dubé, who serves on the Board of Governors as a representative from Québec, is currently chairman of the CDA Membership Committee and is the Executive Council liaison on the Council on Insurance and Investment.

University of Montreal graduate

Dr. Dubé received his DMD degree from the University of Montreal's Faculty of Dental Medicine in 1977 and a master's degree in Health Administration from the



Gilles Dubé, DMD, MSc

same University in 1988.

He conducted a private practice in Laval from 1977 to 1985, and since the latter date, has practised in Lachute, Quebec. He serves as a guest lecturer in the Department of Health Administration at the Faculty of Medicine at the University of Montréal.

Dr. Dubé has been very active in Quebec dental organizations. He has served as a member of the Council of Administration of the Association of Dental Surgeons of Québec (ACDQ) since 1980, representing the Laurentides region. From 1982 to 1986 he was a member of the ACDQ's Executive Committee. He was President of the Laurentides Dental Society in 1980-81.

In addition to membership in the ACDQ, Dr. Dubé is also a member of the Ordre des dentistes du Québec (ODQ), the Canadian Dental Association, the Fédération Dentaire Internationale and the Canadian College of Health Services Directors.

Dr. Dubé and his wife Lucette have two daughters, Geneviève, 12 and Marie-Hélène, 10. Δ

New CDA Recognition Program for Dental Materials

CDA's Committee for Dental Materials and Devices will initiate as a member service, a new recognition program. The Committee plans to publish in the Journal, every four months, products which have successfully submitted proof they meet required standards.

Most members of the Committee on Dental Devices Materials and Devices have been actively involved for many years in the writing of standards for dental materials at both the National (Canadian Standards Association — CSA) and at the International (International Organization for Standardization — ISO) levels. A program of dental standards applicable for Canada has been completed. It covers many of the dental materials and devices used by dentists in current practice.

The Committee laboured for many years

for a workable system that would assure practicing dentists the product they were about to purchase met specified standards of performance. The recognition program received approval by the CDA Board of Governors in August 1988 and will be similar to the one currently in place for dentifrices and other consumer products.

Dental manufacturers will be required to submit to the Committee proof of compliance to the standards. Once analysis of the documentation has been approved the Committee will award a "Seal of Recognition" for the product. The product's name would then be placed on a list and appear in the Journal.

The new "Seal of Recognition" program will undoubtedly be an advantage to all concerned. The dentist will have assurance that the materials and products

purchased are standard approved and the manufacturers will be permitted to use the "Seal" in advertising/promotional material. The first list is planned to be published in the fall of 1989.

Members of the Committee on Dental Materials and Devices

Dr. Ralph Y. Barolet, Chairman, Montreal.
Dr. Derek W. Jones, Halifax.
Dr. Pierre C. Desautels, Montreal.
Dr. Leonard N. Johnson, London, Ont.
Dr. Peter T. Williams, Winnipeg.
Dr. Richard Roydhouse, Vancouver.
Dr. Dennis C. Smith, Toronto.
Government Observer, Dr. Pierre Blais, Ottawa.
Coordinator, Ms. Janice Forsythe, Ottawa. Δ

Four dentists are named to CFDE Board of Trustees

Four dentists from a variety of geographic locations across Canada have recently been named to seats on the Board of Trustees of the Canadian Fund for Dental Education.

Introductions to the new trustees are provided below.

Arnold Steinbart, DMD

A graduate of the University of British Columbia, BSc (1967) and DMD (1971), Dr. Steinbart moved to Prince George, B.C. where he has been practising with a group, Lakewood Dental Group, with 15 other dentists.

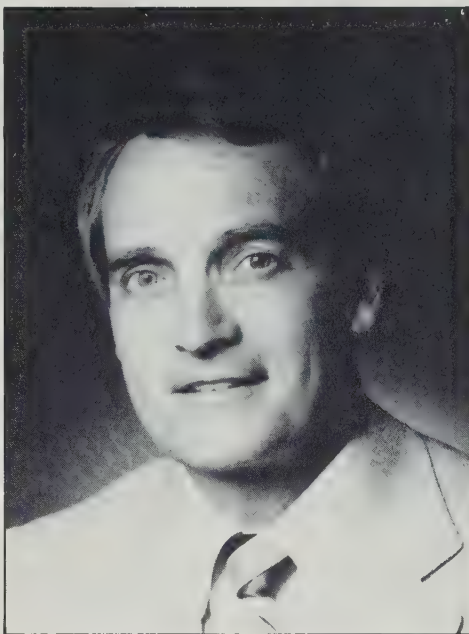


Arnold Steinbart, DMD

He has been active in his local dental society, serving as treasurer and president and has also been chairman of the dental advisory committee of the local community college, the College of New Caledonia.

Dr. Steinbart's service with the College of Dental Surgeons of British Columbia began at the committee level on the Auxiliary Education and Hygiene committees. He then was component society College representative for three years, on the Executive Committee for one year and Treasurer for three years (as part of the management committee).

He is presently involved at the committee level of the College on the Professional Review, Inquiry and Rules and Regulations committees.



Donald J. O'Connor, DDS

Donald J. O'Connor, DDS

Winnipeg-born Dr. Donald O'Connor is a graduate (DDS, 1958) of the University of Toronto. He conducts a general dentistry practice in downtown Ottawa.

He has been very much involved in continuing dental education for a number of years as an active member of the Ottawa Dental Society. Dr. O'Connor served as President of the Society and also the Ottawa Association for the Prevention of Dental Disease (which arranges the continuing education programs).

He served three terms (six years) as a member of the Ontario Dental Association's Board of Governors and was honored by the ODA in 1984 for his service to that organization.

Dr. O'Connor is a member of the Ontario Dental Association, and the Canadian Dental Association and a Fellow of the International College of Dentists.

On the national scene, Dr. O'Connor is probably most familiar as the General Chairman of the Canadian Dental Association Convention Committee in 1985. The site of that Convention was Ottawa.

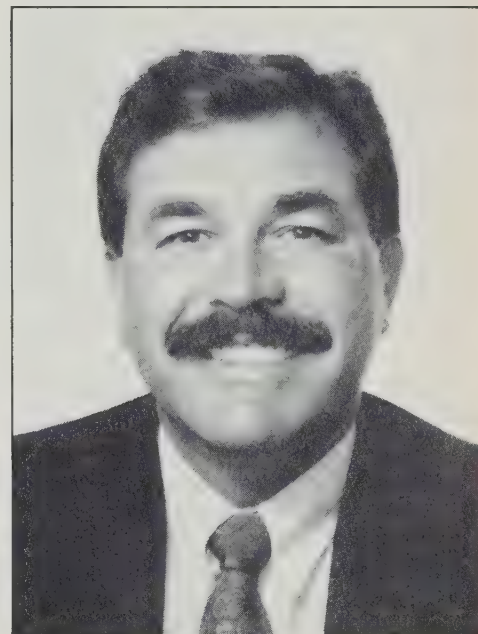
William J. Sharun, BSc, DDS

A native of Edmonton, Alberta, Dr. Sharun is a graduate of the University of Alberta — BSc (1972) and DDS (1974). He is a

member of Associate Dental Group, one of Alberta's first group practices.

Active in the Edmonton and District Dental Society, Dr. Sharun is presently serving as its President. He is also President of the Edmonton Society for Cranio-Cervical Pain Control for the 1988-89 term.

Prominent in the affairs of the Alberta Dental Association (ADA) he has been ADA's Liaison Officer to the Alberta Dental Assistants' Association; Chairman of the ADA Auxiliary Services Committee; ADA representative on the Northern Alberta Institute of Technology Advisory Board, and, ADA representative on the Southern Alberta Institute of Technology Advisory Board.



William J. Sharun, BSc, DDS

Dr. Sharun has also been much involved in some of the Alberta Dental Association's major objectives and achievements. This includes his efforts in the establishment of the Dental Occupations legislation, rather than the Health Occupations Act, for dentistry. (This legislation is currently on hold by the Alberta Government). He arranged the first meeting in Alberta's history, of dental assistants, hygienists, mechanics, technicians and dentists at the same table to discuss the Health Occupations Act. Dr. Sharun has also initiated the establishment of an orthodontics assisting

module for hygienists and assistants. This is also on hold by the provincial government, along with the Dental Occupations Act.

He is a member of the Academy of General Dentistry and the International Association for Orthodontics. In the 1984-85 term, Dr. Sharun served as President of the Alberta Gnathology Society.

In the academic community, Dr. Sharun was a sessional lecturer for the Crown and Bridge Department at the University of Alberta's Faculty of Dentistry from 1975 to 1977.

D. Gregory Baird, BSc, DDS

A general practitioner in private practice in Halifax for 14 years, Dr. Baird graduated from Dalhousie University in 1975.

Dr. Baird is active in an ongoing basis in continuing education courses at Dalhousie University and other institutions.



D. Gregory Baird, BSc, DDS

He has been clinical instructor in the Dental Assisting Program at Nova Scotia Institute of Technology for the past 12 years.

Currently, he is a member of the Nova Scotia Institute of Technology's accreditation committee for the Nova Scotia Dental Assistants program.

Dr. Baird is a past member of the MSI (Provincial Medical Insurance) committee for Dental Claims Evaluation. He served in that capacity for three years.

He continues to be an active and contributing member of the Nova Scotia Dental Association. From 1977-1981, Dr. Baird served on the Professional Development Committee. He was chairman of that committee for a term.

He supports both academic and alumni activities at Dalhousie University and is a past member of the Alumni Fund Raising Committee. Δ

Ethics, professionalism, themes of Teaching Conference

The Canadian Dental Association's Teaching Conference for 1989 will focus on Ethics and Professionalism in the DDS/DMD Curriculum. The conference is generously funded by the Canadian Fund for Dental Education. It will be held September 15 and 16, 1989, in Toronto at the Brownstone Hotel. Invited participants will include dental ethics educators, representatives of provincial dental boards and provincial dental associations, representatives of Canada's Young Dentists, and members of the Canadian Dental Association Council on Ethics.

The goal of the conference is to stimulate cooperation between dental educators and organized dentistry in establishing effective educational experiences about ethics and professionalism into the "lifelong dental curriculum." The conference will focus not only on curriculum, but also continuing education opportunities for dentists to explore today's challenging ethical issues. Using an active workshop format, conference participants will explore issues which will be

identified by pre-conference input from provincial dental board and association registrars and executive officers and dental ethics educators. Some topical issues that will be addressed are: Ethical Dentist/Patient Relationships in the Consumer Society; Ethical Dentist-to-Dentist Relationships in a Competitive Professional Marketplace; The Ethics of Third Party Payment; The Ethics of Professional Marketing; Ethical Relationships with Dental Auxiliaries; The Canadian Dental Association's Code of Ethics — Does it Meet the Needs of Today's Dental Profession and Society?

Two acknowledged experts in the area of dental ethics will act as keynote speakers and facilitators of the conference. **Dr. David Ozar**, from the Department of Philosophy at Loyola University at Chicago, Illinois, is currently the editor of the American Dental Association's Journal "Chairside Ethics" section. He is also Chairman of the PEDNET organization, which is a network of dental ethics educators, practicing dentists, ethicists,

social scientists, and dental organization officers in North America.

Dr. Arthur Schafer is Director, Center for Professional and Applied Ethics, University of Manitoba, and Head, Section of Biomedical Ethics, Faculty of Medicine, University of Manitoba. Dr. Schafer has taught professional ethics in the Faculty of Dentistry at the University of Manitoba. He is the author of the three-part special feature article in the Canadian Dental Association's Journal, on "Ethics: Challenge and Crisis."

This conference on Ethics and Professionalism in Canadian Dentistry is expected to be thought-provoking and productive. All Canadian dentists are welcome to attend and participate. For further information about the conference, contact the conference chairman, Dr. Bruce Graham, Associate Dean for Academic Affairs, Faculty of Dentistry, Dalhousie University, Halifax, Nova Scotia, B3H 3J5, 1-902-424-2275. Δ

Vancouver 1989:

Convention Countdown



The Scientific program of the August CDA convention in Vancouver is now completed. Some additions are still possible, so continue to consult the CDA Journal and watch for the Preliminary Program that will be mailed directly to you.

The generosity and eagerness to share knowledge by the Vancouver dentists and the University of British Columbia Faculty of Dentistry was overwhelming. They have responded with enthusiasm to the call from the committee to give short lectures of 45 to 75 minutes duration each. These are presentations with no honourarium attached, so thank you Vancouver and thank you Dr. Bob Hicks and Dr. Bob Clarke for all your efforts.

Attendees at the convention never realise the amount of work and time put into the social program. Dr. Jim Stich and Dr. Bob Hicks are using all their creativity and the resources in B.C. to put on something that those who will attend will remember.

Class Reunions at CDA conventions are an equally

important aspect of the convention. We have already had many inquiries about class reunions. As meeting space is limited, if you are interested in organizing a class reunion, please let us know and we will help in any way we can.

Table clinics will again be part of the program. The Dentsply student clinics will feature the ten winners from each Canadian dental school who will meet in competition. The scientific table clinics program is looking for dentists, dental assistants and dental hygienists interested in sharing information, techniques or clinical experience with their colleagues. If you fit into this category, please contact us with the details of your table top presentation. The time to apply for these table clinics is now. General table clinics will feature the latest equipment, equipment maintenance techniques and technology as presented by companies involved in the dental industry. This is the time to ask the experts any questions you may have about their products.

*Dr. Michel Jahjah,
General Chairman
CDA Conventions*



Skyline – Vancouver, British Columbia (Photo: DRIE/MEIR)

Vancouver 1989

Convention Program

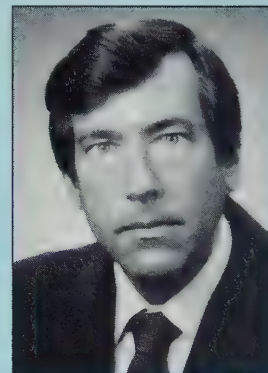
Some of the Speakers Appearing from August 28-30



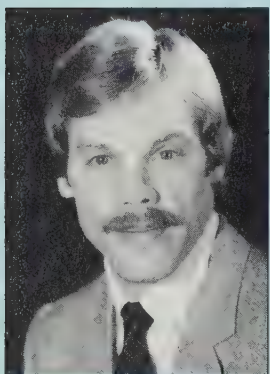
Jennifer de St. Georges
Monte Sereno, California
Practice Management



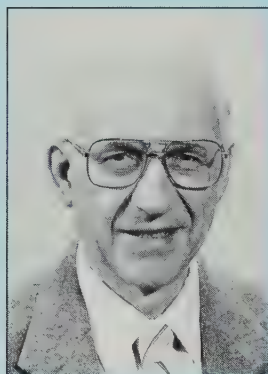
Tom Snyder D.M.D., M.B.A.
Cherry Hill, New Jersey
Computers



Terry D. Myers D.D.S.
Walled Lake, Michigan
Lasers



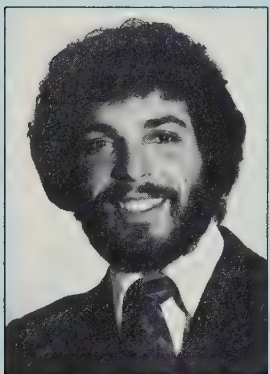
Pierre Boudrias D.D.S., M.S.D.
Montréal, Québec
Crown and Bridge



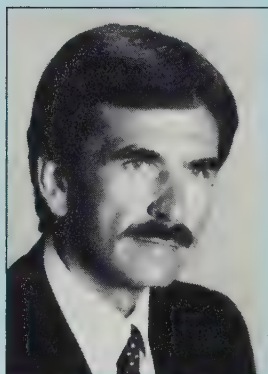
Ernie Ambrose D.D.S.
Saskatoon, Saskatchewan
Restorative



Kenneth L. Zakariasen D.D.S., MS.S., Ph.D.
Halifax, Nova Scotia
Endodontics



Perry V. Goldberg D.D.S.
Montréal, Québec
Surgery



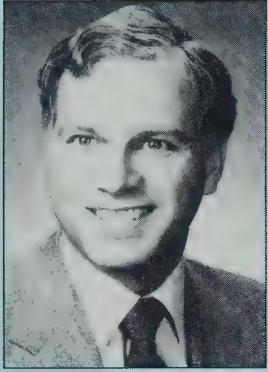
David R. Federick D.M.D., M.Sc.D.
Marina Del Rey, California
Post and Core



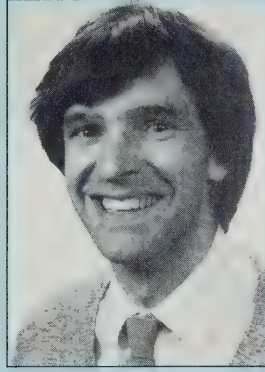
Fred Weinstein D.D.S., M.S.
Vancouver, British Columbia
Bleaching

Vancouver 1989

Convention Program



John Molinari D.D.S., M.S.
Detroit, Michigan
Infection Control



Gilles Lavigne D.D.S., M.S.D.
Montréal, Québec
Pain



Marvin Werbitt D.D.S., M.S.
Montréal, Québec
Surgery



Ian Vogan D.D.S.
Halifax, Nova Scotia
Stress and Dentistry



Joel Epstein D.M.D., M.S.D.
Vancouver, British Columbia
Medically Compromised Patient



Dale Miles D.D.S., M.S.
Indianapolis, Indiana
Oral Pathology / Radiology

The following speakers will be featured in later issues of the Journal

Paul Robertson D.D.S., M.S.
Vancouver, British Columbia
Periodontics

William McDonald D.M.D.
Vancouver, British Columbia
Medical Emergencies

Richard Tucker D.D.S.
Ferndale, Washington
Fixed Prosthodontics

Chris Clark D.D.S., M.P.H.
Vancouver, British Columbia
Ethics

Crawford Bain D.D.S., M.S.
Halifax, Nova Scotia
Periodontics

Gary Gibson D.D.S.
Vancouver, British Columbia
Hospital Geriatric Dentistry

Ken Neuman D.D.S.
Vancouver, British Columbia
Imaging

Larry Cheevers D.D.S.
Vancouver, British Columbia
Forensic Dentistry

Dental Assistants Program
Cladia Anderson
Personality Profiles

Dental Assistants Program
Arlene Gladstone M.S.W., R.S.W.
and Li Bolson M.S. – Stress

Graham Matheson D.M.D.
Vancouver, British Columbia
Removable / Fixed Prosthodontics

Table Clinics

Panels

Vancouver 1989

Pre-Convention (Limited Attendance Courses)

August 26-27



Dr. Ronald E. Jordan

"Clinical Update on Esthetic Composite Bonding: Techniques and Materials."

- 1) Anterior composite materials
- 2) Dentin bonding agents
- 3) Posterior composite restorations
- 4) Conservative treatment of discoloured and malformed dentitions:
 - bleaching – both vital and non vital
 - direct composite veneers and bonding "add-on" techniques
 - combined bleach-veneer techniques
 - indirect composite veneers (Dentacolor; Visio Gem)
 - indirect porcelain veneers (Cerinate; Chameleon)



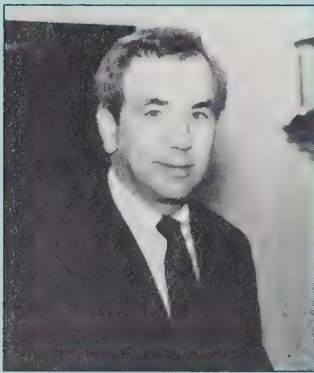
Linda Miles

Practice Management

- Set the stage for case acceptance
- Dental insurance
- Inventory control systems
- The three Rs of Motivation/Incentives
- How to attract and keep new patients – marketing tips
- Attract and hire a motivated staff
- Dress for success – dentists and staff

Pre-Convention (Hands-on Courses)

August 26-27



Dr. Irvin A. Roseman

"A Better Prognosis Through Organized Endodontics."

This seminar brings to the practitioner the principles necessary to perform predictable and effective endodontic therapy. Through step by step procedures, illustrations and case presentations, the participants will easily be able to incorporate these techniques profitably and efficiently into their practice. Following his morning lecture presentation, the afternoon hands-on session will include:

- Molar endodontics
- Endotec use
- Case discussion



Dr. Michael Goldfogel

Cosmetic Technique and Management Course

- A review of cosmetic dental materials. New developments in resin systems.
- Esthetic restoration placement. Diastema closure. Peg lateral. Freehand veneer, indirect veneer. Cervical erosion. Posterior composite.
- Colour, contour, esthetic consideration
- Managing a cosmetic practice
- Hands-on
- Clinical case examples

Vancouver 1989

Social Program

Sunday, August 27

Opening Ceremony

5:00 p.m. to 7:00 p.m.

When making your travel plans to Vancouver, keep the Opening Ceremony in mind. This new feature at the CDA convention promises to be a hit, so make sure to arrive in Vancouver in the early afternoon.

For the time being, our grand plans are still under wraps, but keep watching this space in upcoming issues of the Journal as we gradually lift the veil of secrecy. Be prepared for a multicultural evening of outstanding entertainment.

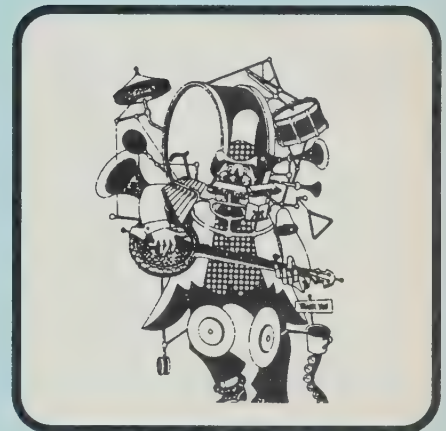


Carnival Night

7:00 p.m. to 10:30 p.m.

Immediately following the Opening Ceremony, carry over the festive mood to an evening themed around an amusement park. It is hard to describe the fun-filled atmosphere. Don't be left out, experience it for yourselves.

Bring the family, your friends, or come alone. Your favourite quality junk food will be available.

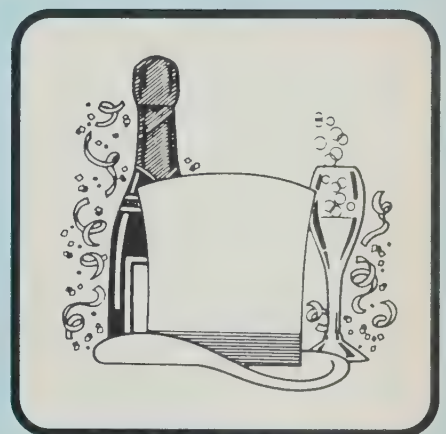


Monday, August 28

Black and White Evening

6:00 p.m. to 8:00 p.m. ■ cocktails
8:00 p.m. onwards ■ dinner and dance

A dramatic evening themed in black and white. Cocktails, fine dining, dancing to the sounds of two bands – a big band swing orchestra and a contemporary band.



Vancouver 1989

Spouses Program

Monday, August 28

Breast Cancer Lecture Plastic and Cosmetic Surgery Lecture and Lunch

The day starts at 9:00 a.m. with coffee and muffins, followed by an informative lecture on breast cancer given by Dr. Joanne Emerman. Our second presentation features Dr. Richard Warren who will discuss the latest techniques and procedures available to patients today in plastic and cosmetic surgery. Lunch will follow in the Pan Pacific Hotel's scenic Prow Restaurant, overlooking beautiful Burrard Inlet and the breathtaking North Shore Mountains.

Tuesday, August 29

Sea Bus to Shopping and Lunch

The Sea Bus passenger ferry departs at 9:00 a.m. for Lonsdale Quay, located across Burrard Inlet on the North Shore of Vancouver Harbour. Here you will encounter many shops and services as well as an open market. Browse until 12 noon, at which time lunch will be served at Loops Restaurant in the Lonsdale Quay Hotel. The day winds up at 2:00 p.m. with the return crossing by Sea Bus to the Vancouver Trade and Convention Centre.

Wednesday, August 30

Your Lifestyle, Your Choice. How healthy are you? and Breakfast

Meet for coffee and muffins this morning at 9:00 a.m. and stay to listen to an exciting lecture presented by Ms Susan Chernov of the Fitness Group in Vancouver. Ms Chernov's lecture entitled "Your Lifestyle, Your Choice. How Healthy are you?" will run until around 11:00 a.m., rounding off the spouses' program.

Children's Program

Free yourself up to enjoy the convention's lectures, exhibits, and spouses' program. Leave your children aged five years and over in the care of Diane Markey, Chairperson, and her committee, who will offer them an informative and entertaining two day program.

Monday, August 28

Science Fair IMAX Theatre and Lunch

Buses leave the Vancouver Trade and Convention Centre at 9:00 a.m. for the Science Fair at the former site of Canada's World Exposition, EXPO '86. Here, the children will participate in a brand new hands-on exhibit. After a box lunch, the buses will take them to the IMAX theatre at the Convention Centre where they will be entertained by their latest 3-D film presentation.

Tuesday, August 29

Aquarium Planetarium and Lunch

Buses leave the Vancouver Trade and Convention Centre this morning at 9:00 a.m. Our first stop will be the Vancouver Aquarium in beautiful Stanley Park, where the children will be treated to a tour of the Aquarium. As well as seeing the variety of marine life on display, they will have the opportunity to take in the beluga whale and killer whale shows. The next stop is the H.R. MacMillan Planetarium in Vancouver's Vanier Park. Box lunches will again be served before viewing the Planetarium's latest film presentation entitled "Eye in the Sky", an exciting look at earth satellites and the galaxies.

Vancouver 1989

How to register for the CDA Convention

Filling out Your Registration Form

1. Register early, some courses have limited attendance.
2. There is only one registration form to be used by all categories of participants.
3. Use one form per person (photocopy for several registrants).
4. Spouses and children should have a separate form for each individual.
5. Total the dollar amount of activities and courses you plan to attend, and make cheque payable to the Canadian Dental Association.
6. If your cheque covers the cost for several registrants, your name or company name should be clearly indicated in the appropriate space on each registration form.
7. Dental assistants and dental hygienists should fill out a separate form for each individual.
8. If hotel accommodation is needed, fill out the hotel reservation form.
9. If travel arrangements are needed, call Air Canada Convention Central for the best rates and services.

Filling out Your Hotel Reservation Form

1. Reserve early. August is a very busy month in Vancouver. We have negotiated for you the best rates possible at many of Vancouver's luxury hotels, but hotel rooms are limited in number.
2. CDA is handling the hotel reservations in house, so you will not be able to reserve directly with the hotel.
3. Use one reservation form per room.
4. Your reservation will be confirmed by the hotel.
5. To guarantee your room for late arrival, you must pay your first night deposit directly to the hotel.
6. Any further changes to reservations should be made through CDA headquarters.

Making your Airline Reservations

Air Canada has been appointed the sole official carrier for the Canadian Dental Association 1989 Annual Convention in Vancouver. Special arrangements have been made with Air Canada to offer convention participants discounts on air fares. To take advantage of this service, you must call Air Canada's Convention Central when booking your tickets (your travel agent can call on your behalf). Dial **1-800-361-7585**. The Convention Central hotlines are open **weekdays, 9:00 a.m. to 5:00 p.m. EST/EDT**. Identify yourself and the CDA convention. Air Canada's convention experts will do the rest. The lowest fare available will be confirmed to you, subject to availability and advance purchase conditions.

Fly Canada's #1 Convention Airline to the 1989 CDA Convention in Vancouver, and SAVE. Through Convention Central, you also have the opportunity to save on car rentals. Ask for details when booking your flight. The Convention Central staff are eager to help in any way.

Not to be overlooked, Air Canada has graciously offered two tickets for any destination it services in North America or Europe as the prize in our advance registration draw. To be eligible for the draw, you must register for the convention before July 17.

1989 CANADIAN DENTAL ASSOCIATION CONVENTION

August 26 - 30, 1989 ■ Vancouver Trade & Convention Centre

Vancouver, British Columbia



Hotel Reservation Form

Please check appropriate category:

☐ Dentist ☐ Hygienist ☐ Assistant ☐ Exhibitor ☐ Office Personnel ☐ Other (please specify) _____

Name: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Telephone: () ()
(Res.) (Office)

Type of Room

☐ Single ☐ Double ☐ Twin ☐ Other (please specify) _____

Indicate first three hotel choices (by numbering the boxes):

- | | |
|--|-----------------------------------|
| ☐ Pan Pacific (CDA Headquarters) | \$149.00 single / double |
| ☐ Four Seasons (CDA Headquarters) | \$135.00 single / double |
| ☐ Hyatt Regency | \$135.00 single / double |
| ☐ Hotel Vancouver | \$130.00 single / double |
| ☐ Sheraton Landmark | \$110.00 single / double |
| ☐ Hotel Georgia (CDAA Headquarters) | \$ 99.00 single / double |
| ☐ New World Harbourside | \$ 95.00 single / \$105.00 double |

Arrival Date: _____ Departure Date: _____

Arrival Time: _____

Your reservations will be confirmed to you directly by the hotel. This reservation is guaranteed only **until 6:00 p.m.**
Information for guarantees after 6:00 p.m. will be provided with the confirmation from the hotel.
Any future changes to the reservation should be made through the Canadian Dental Association.

Send Reservation Form to:

CDA Convention
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

DO NOT send a deposit with this Reservation

DEADLINE for Reservations: July 17, 1989

ONE FORM PER PERSON
Duplicate for multiple
registrations.

1989 CANADIAN DENTAL ASSOCIATION CONVENTION

Vancouver Trade & Convention Centre • August 26 - 30, 1989

ADVANCE REGISTRATION FORM

With the new computerized registration system, it is *essential* that each registrant fill out a separate form. Photocopy the form for more than one registration. Advance registrations will be accepted until *July 17, 1989* after which they will be returned to the sender. Each on-site registration will be subject to a \$25.00 administrative fee. Please print.

Surname: _____ First Name: _____ Sex: _____

Address: _____ (Street) _____ (City) _____ (Province)

Telephone: _____ () _____ () _____ (Residence)

(Postal Code) _____ (Office) _____

CDA Membership or License Number: _____

PRE-CONVENTION • AUGUST 26, 27 • Limited Attendance

SATURDAY, AUGUST 26

Dr. Ron Jordan - COMPOSITES - Lecture

Dentist \$ 150.00
Staff \$ 50.00

Dr. Irvin A. Roseman - Endodontics - Hands-on Program

Dentist \$ 175.00

SUNDAY, AUGUST 27

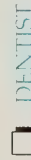
Ms Linda Miles - PRACTICE MANAGEMENT - Lecture

Dentist \$ 150.00
Staff \$ 50.00

Dr. Michael Goldfogel - Composites - Hands-on Program

Dentist \$ 175.00

CONVENTION • AUGUST 28, 29, 30



DENTIST

Member College of Dental Surgeons of British Columbia Nil
Member, CDA/ADA (American/Foreign) \$ 125.00
Non-member, CDA \$ 190.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



DENTAL HYGIENIST

CDHA/BCDHA Member \$ 60.00
Non-member \$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



DENTAL ASSISTANT

CDAA Member \$ 60.00
Non-member \$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



TECHNICIAN

..... \$ 60.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



OFFICE PERSONNEL

..... \$ 60.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



STUDENT

Dentist ☐ Hygienist ☐ Dental Assistant Nil

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony



ACCOMPANYING PERSON/SPOUSE

..... \$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony and Spouses' Program including two luncheons.



CHILD

..... \$ 40.00

Includes: Access to convention, Sunday Opening Ceremony and Children's Program including two box lunches.



SOCIAL EVENTS

Sunday • Opening Ceremony - 5:00 - 7:00 p.m. (Incl. in registration) Nil
Will attend ☐ Yes ☐ No

Sunday • Carnival Night - 7:00 - 11:00 p.m.
(following Opening Ceremony) per person \$ 10.00

Monday • "Black & White" Evening (per person) \$ 40.00

TOTAL \$

The above registration fees are paid by _____

IMPORTANT:

Please make cheque payable to: Canadian Dental Association
and mail to: 1989 CDA Convention
c/o Canadian Dental Association

No post-dated cheques,
please. 1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

Cancellation Policy:

- Cancellations received on or before July 17, 1989 - full refund
- Cancellations after July 17, 1989 - subject to a 25% administrative charge
- No refund after August 10, 1989

Dentists registering by July 17, 1989 will be eligible to win two tickets
anywhere Air Canada flies in Europe and North America!

When they open wide – *are you wide open?*



Every day, you and your staff are exposed to blood and saliva. And that's how hepatitis B is spread – through contact with infected body fluids.

Worldwide, it is estimated that some 285 million people carry this highly infective and potentially lethal virus. For several reasons, the number of carriers in Canada is growing daily. *Unfortunately, you can't recognize a hepatitis B carrier on sight. That puts you at high risk.*

Vaccination is your best protection. So why not practice some "preventive dentistry" on yourself and your staff. For convenience and savings, take advantage of the special order form provided on the opposite page.

Prevention is your best protection.

Engerix®-B is a remarkable product of genetic engineering, so it can meet the highest standards for effectiveness and purity.

Best of all, Engerix®-B is priced to provide significant cost savings compared to previous hepatitis B vaccines.

Choose either the conventional 3 dose schedule (months 0, 1, 6), or a 4 dose schedule (months 0, 1, 2, 12) for more rapid protection. Engerix®-B may also be used as a booster for those previously vaccinated with a plasma-derived vaccine.

Make a solid investment in prevention. Use the convenient form below to order for you and your staff.

Engerix®-B SK&F

Hepatitis B vaccine (recombinant)
Sensible protection at a sensible price

(Cut here)

No. 9096 **ENERGIX®-B Hepatitis B Vaccine (recombinant)**

Unit price: \$33.00 per single dose vial. A \$7.50 shipping charge must be added to orders under \$300.00. Cheque or money order must accompany order.

Please complete all sections below, enclose cheque or money order, and mail to:

Institut Armand-Frappier
ORDER DEPARTMENT
531, boulevard des Prairies, C.P. 100
Laval, Quebec H7N 4Z3

(Please print clearly, using block letters)

**Please
Ship:**

_____ vials at \$33.00 each = \$

plus

_____ shipping charge (\$7.50) [if applicable] = \$

Total Enclosed \$

Ship to:

_____ Name

_____ Street Address

_____ City

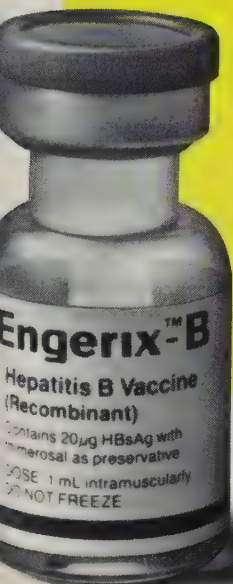
_____ Province

_____ Postal Code

_____ Telephone

Signature:

Date:



In Toronto Canadian/U.S. dental consultants meeting in June

The Tenth Annual Workshop of the American Association of Dental Consultants will be held in the Admiral Hotel in Toronto from June 1-4, 1989, in conjunction with the Canadian Association of Dental Consultants Annual Meeting.

The Canadian organization was formed in the fall of 1984 by a small group of dentists drawn together by common purpose and necessity. The goals of the Association are to establish an avenue of communication for its members and to encourage them to advance their qualifications that they can better serve the interests of dentistry, dental plans, subscribers, policy holders and their insuring employers.

The cooperative affiliation between American and Canadian Dental Consultants leads to an "international" sharing of ideas and dialogue involving those important dental insurance concerns. The two organizations freely share in each other's workshops held twice a year. Canadian Consultants have access to the American Association's certification process and examination.

Dr. Edward Mazak of Windsor was the Canadian Association's first president. He was succeeded by the current president, Dr. William Walker of Windsor. The Association has 40 active members throughout Canada. Membership is open to any dentist retained by an insurance carrier, self-insured dental plans, administrator or commercial entity licensed to practice in Canada.

The Association has grown from very small beginnings of a few years ago and now looks forward to the International Toronto meeting and workshop in June to bolster interest and membership. Their goal is to eventually list all Dental Insurance Consultants on its membership roll. More information of the Association and of the June 1-4, 1989 meeting may be obtained from Dr. William Norgate, 901 St. Marys Road, Winnipeg, R2M 3R4. Δ

Dentistry's top 10 issues in the U.S.

Infection control and AIDS were the major issues confronting the dental profession in the United States in 1988, according to reviewers for the Journal of the American Dental Association (JADA).

About 400 clinicians and scientists who serve as JADA reviewers were polled to determine the ten most significant events and issues facing dentistry last year.

1. Infection control
2. AIDS
3. The Federal Trade Commission actions regarding dental advertising standards, particularly as related to dental specialty announcement
4. Recognition of a recombinant DNA probe test for three types of bacteria linked to periodontal disease by the ADA Council on Dental Materials,

Instruments and Equipment

5. Dental implants
6. Bonding composite resins to dentin and enamel, a technique that has been successfully tested at the ADA Health Foundation Paffenbarger Research Center
7. National Institute of Dental Research (NIDR) findings showing the decline of dental caries in permanent teeth in school-aged children in the U.S.
8. Federal regulations requiring dentists to inform their staff of potentially hazardous chemicals present in the dental office
9. TM disorders and related controversy surrounding diagnosis and treatment
10. The availability of affordable professional liability insurance coverage. Δ

CDA Retirement Savings Plan

Unit values: (Funds are valued weekly)

Fund	Unit values as at	
	February 28, 1989	January 31, 1989
Bond & Mortgage Fund	63.31266	63.94994
Common Stock Fund	15.07574	15.05863
Money Market Fund	43.38529	43.04861
Balanced Fund	26.71538	26.93303

G.I.C. Fund

Term

	*Interest rates as at	
	February 28, 1989	January 31, 1989
1 yr	11.625%	11.15%
2 yr	11.50%	11.15%
3 yr	11.15%	11.15%
4 yr	11.15%	11.15%
5 yr	11.15%	11.15%

(*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

	February 28, 1989	January 31, 1989
	\$104,431,912	\$103,086,229

For further information:



Write:

CDSPI

Retirement Services Dept.
Suite 600
2 Lansing Square
Willowdale, Ontario
M2J 4Z3

or phone, toll-free:

Western and Atlantic Canada
and Ontario Area Code 807
only 1-800-268-5418
Quebec and Ontario, (except Area
Code 807) 1-800-268-3411
Metro Toronto Area . . . 497-7117

A win for fluoridation in Squamish, B.C.

*Dr. D. Christopher Clark
Dr. H. Jack Hann*

Should fluoridation of the public water supply in Squamish continue? This was the decision voters of this British Columbia community were asked to make in a referendum on municipal election day in British Columbia, last November.

Their public water supply had been fluoridated for almost 20 years and the community boasted one of the most impressive successes in the Province in keeping the fluoridation at the recommended level.

The issue was introduced by one of the city aldermen who had taken considerable interest in the topic. Perhaps adding to the difficulty of the question, at least to the municipal alderman and mayor, was the fact that the existing equipment had failed and was being replaced. Two treatment plants were to be operational instead of just one as in the past. There were obviously financial considerations at play at this point. One year prior to this point the issue had been raised by the alderman in question. At that time local health professionals had successfully convinced the City Council that they should continue to fluoridate the water. After actually purchasing the necessary equipment for one of the proposed plants, the Council retreated from its prior commitment and chose to put it to a public vote. On this occasion local health authorities were not successful in stemming the tide and the issue was put to referendum.

About eight weeks before voting day, the referendum issue came to the attention of the local medical health officer and the senior dental consultant to the Health Ministry. Local health professionals and the community requested help from the College of Dental Surgeons of B.C. and the University of British Columbia. Two public health dentists volunteered their services. To add to the difficult task ahead, the City Council had authorized funding to support the attendance of Dr. John Lee at a public meeting on the issue just two weeks prior to voting day.

Local health professionals took the lead and together with public health and university representatives, the group

went to work on the campaign. The Committee quickly recognized that there was apparently little resistance to fluoridation other than the one alderman. No real opposition campaign was evident and local sentiment seemed to be in favor of fluoridation. What seemed necessary was to keep things as quiet as possible and to get the broad base of support to the ballot box. Because Squamish only has about 10,000 residents, it was easy to make all the necessary contacts. The local press was supportive as was the challenger for the mayoralty seat. Interestingly, the fluoridation referendum seemed to be a non-issue in the election.

Most people were quite perturbed that the issue had been put on the ballot. Regardless, there was still the public meeting and Dr. John Lee to counter. Again it was easy to draw upon the experience of others who had previously debated or dealt with Dr. Lee. Consultation with internationally recognized authorities, Drs. Ernie Newbrun, Robert Faine and Steve Ecklund provided us with information and assistance to address most of Dr. Lee's claims. For the most part he brought no new surprises to the debate.

Noted antifluoridationist

For those who haven't had the opportunity to meet him, Dr. Lee is a practising physician from San Francisco who has a long history of fighting fluoridation. His credentials are particularly damaging as is his delivery which is calm and well planned. As anyone who has had to compete against him would know, a debate with John Lee is a no-win situation. On the big night proponents were pleased that the turnout was poor. Local health professionals had been successful in getting a fair number of people to turn out but most present were anti-fluoridationists. Many were not from the community of Squamish. After two hours of verbal duelling, the moderator brought the meeting to a close with what was an interesting and revealing question. He asked if anyone had a change of opinion about fluoridation based on what they had

heard there that night. Of the perhaps 100 persons present, not one hand was raised. He added his thoughts that reaffirmed the futility of such a forum.

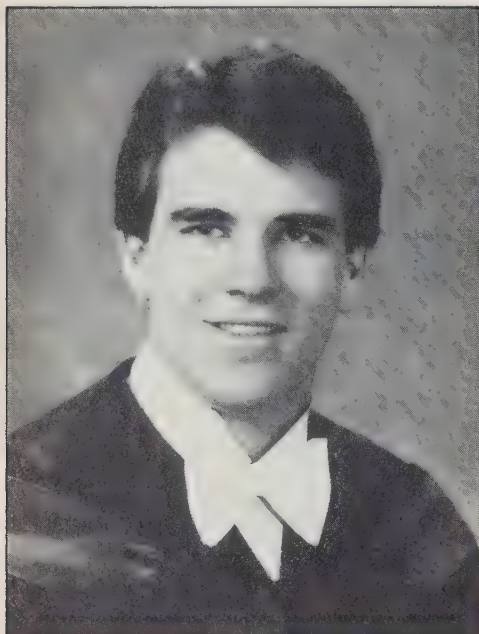
Following the public meeting, the proponents went to work and implemented their plan. In particular, key persons from the community wrote letters to the editor of the local newspaper and a full page ad was published that listed all the local dentists and physicians. It reaffirmed their support for fluoridation. Two days before the referendum, dental students from the Faculty of Dentistry, The University of British Columbia and dental assisting and dental hygiene students from Vancouver Community College helped local health professionals canvas 1,800 homes in Squamish. For the most part they were well received by the public and students were thrilled by the experience. Two days later the residents of Squamish voted to keep their water fluoridated. Perhaps more important than the fact that we won, was the margin of victory — 73 per cent favored water fluoridation.

Concerted effort — essential

This is but one more story about water fluoridation in North America. Fortunately this time we were successful. Without good local support from both the public health community and local dentists and physicians, and a poorly conceived effort from the opposition, the outcome could have been very different. As the caries decline in children and young adults continues in North America the profession must reaffirm its commitment to the prevention of tooth decay. There seems to be a misconception that there is no tooth decay to be found in children. Clearly this is not the case. Further, controlled water fluoridation continues to be the safest and most cost-effective method of caries prevention. Δ

D. Christopher Clark, BSc, DDS, MPH, Chairman, Division of Preventive and Community Dentistry, Faculty of Dentistry, University of British Columbia

H. Jack Hann, DDS, MPH, FRCD(C), Assistant Professor, Division of Preventive and Community Dentistry, University of British Columbia.

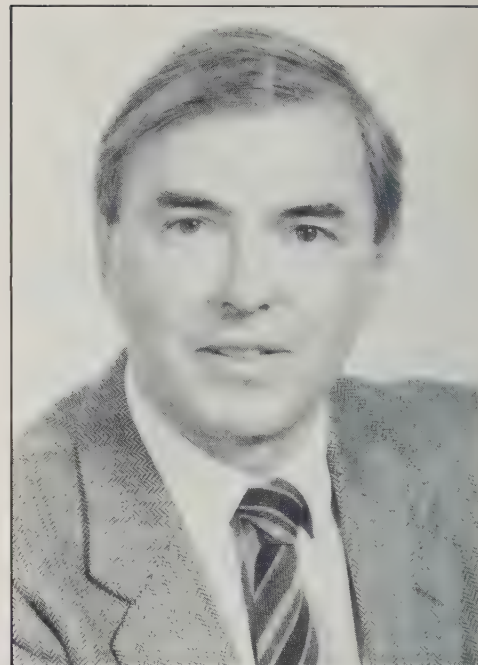


Dr. Brian D. Fairbanks

Dr. Brian Fairbanks has received the Academy of General Dentistry Senior Student Award from Dr. Donald Yu, Vice-President and Membership Chairman of the Alberta Academy of General Dentistry.

Dr. Fairbanks was selected as the outstanding senior dental student most adapted to general practice. The presentation was made at the 1988 University of Alberta Faculty of Dentistry's Graduating Class Breakfast.

Dr. C. Osadetz, Chairman, Division of General Practice, Dr. L.W. Kline, Professor, Division of Physiology and Pharmacology and Dr. Don Yu with the selection committee, helped to name the recipient of the award. Δ



Dr. Robert Pilliar

Dr. Robert Pilliar, Professor of Biomaterials, Faculty of Dentistry, University of Toronto, has been designated the recipient of the Clemson Award for research in biomaterials, 1989. The award, made by the American Society for Biomaterials, is one of the most prestigious in the field and reflects meritorious contributions to the advancement of the science over a considerable period.

Dr. Pilliar has been a Professor of Biomaterials in the Faculty of Dentistry and the Department of Metallurgy and Materials Science since 1978. He is well known for his work on the concept of biological fixation of implants by bone ingrowth into porous surfaces. He has published numerous papers and is the originator of several patents relating to medical and dental implants. He is Coordinator of an MRC Programme on the Development of Improved Dental Implants and a Project Leader in the Centre for Biomaterials, University of Toronto.

The Centre now has a unique record in that two of its members have been recipients of the Clemson Award. The Director, Dr. Dennis C. Smith, received it previously, in 1976. Δ



Some time ago, Dr. Gilles Dubé, a member of the Executive Council of the Canadian Dental Association, presented scholarship awards (\$500 each) from the Canadian Fund for Dental Education to Mrs. Martine Chamberland, (left) a second year dental student and Mrs. Isabelle Baillargeon, (centre) a third year student, at Laval University's School of Dental Medicine. Δ

Dental Health Month Smiles Again

With Bob and the Celebration of the Smile, this year's Dental Health Month promises to be better than ever. The Dental Awareness Program team hopes you and *your* team are circulating, decorating, communicating, and participating! See last month's issue of the Journal for fast and easy ways to make Dental Health Month come alive in your office and your community.

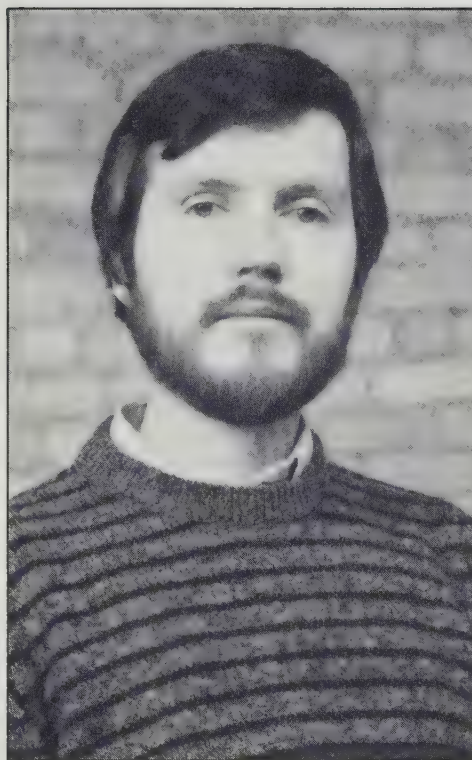
Who's Smiling Now?

Meet the man behind the Celebration of the Smile. Noted Canadian illustrator John Fraser created the heartwarming image on this year's Dental Health Month poster, seen on the cover of the March Journal and (by now) in dental offices across the country.

Fraser likes to create images that "people can feel good about", and found the assignment of the Celebration "more fun than a challenge. I like to make people laugh anyway, and I try to evoke happiness and entertainment in my work."

One of Fraser's artistic role models is Norman Rockwell, who he describes as "one of the great American artists, even though he was a commercial illustrator. I like the way people feel when they see his work". The Rockwell influence is clearly evident in the warmth and charm of A Celebration of the Smile.

What keeps John Fraser smiling? "Good friends, people I love being with, vacations, and good weather." And that smile is evident in the Celebration poster — in a gesture reminiscent of Alfred Hitchcock, Fraser has painted himself into the picture! No, he's not the gap-toothed boy peering through the hole in the fence — he's the bearded man wearing a yellow shirt and an enormous grin. Clearly, John Fraser wanted to join in the Celebration!



John Fraser

Colgate Joins the Celebration

With the help of Colgate, Dental Health Month will reach millions of Canadians this month. In a collaborative effort to educate more Canadians about the Five Point Prevention Plan, Colgate is the exclusive sponsor of the Keep Smiling dental health supplement, to be found in a major magazine during April.

To bring the supplement into line with the Celebration of the Smile theme, new cover and a new introductory message will grace the supplement's pages. Bob and the Keep Smiling slogan will be on the cover, while the introduction will include a one-page message from the CDA. The same great information about

the Five Point Prevention Plan's still there, explained in an inviting and easy-to-read style.

Colgate has contributed more than \$300,000 to the printing and placement of the upcoming supplement. At press time, the magazine to carry the supplement hadn't yet been selected. Watch for a notice in the upcoming issue of Communiqué for details.

The Five Point Prevention Plan supplement first appeared in September 1988 issues of Canadian Living and Coupe de Pouce, and was an instant success. Overruns of this supplement are still available for your office in bundles of 100s. These are available for the shipping costs — \$5 per 100. Please note that all orders must be prepaid.

Please write or call:

Order Section
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario
K1G 3Y6
(613) 523-1770
Toll Free: 1-800-267-6364
(Eastern Canada except
area code 709)
1-800-267-6354 (Western
Canada, and area code 709)

Thanks to the CFDE

As part of its ongoing commitment to educational collaboration with the CDA, the CFDE has made a generous \$10,000 grant in support of Dental Health Month. This grant has been applied toward the production of the extraordinary new Dental Health Month poster, A Celebration of the Smile.

The CDA is grateful to the CFDE for its ongoing support of Dental Health Month. △

To those Dentists who have never been to a CDA Convention

- ☐ IF you are booked more than 5 weeks in advance
- ☐ IF you net more than \$200,000. per year
- ☐ IF most of your staff have been with you more than seven years
- ☐ IF your partners don't get on your nerves
- ☐ IF your motto in life is 'Don't worry - be happy!'
- ☐ IF you rush to work in the morning with a smile
- ☐ IF you rush home at the end of the day with a smile

...You **still** need to attend the CDA Convention in Vancouver
to tell the rest of us how you **do** it!



Canadian Dental Association Convention Vancouver 1989

Table Clinics

Table Clinics are defined as a brief table top presentation or demonstration of five to ten minutes duration using visual aids, and repeated over a 2 1/2 hour period.

Those interested in presenting, write to:



Dr. Bob Clarke
Scientific Program
CDA Convention
1815 Alta Vista Drive
Ottawa, Ontario
K1G 3Y6



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8

Annual Report

Rapport annuel

Honour
Roll

Tableau
d'honneur

CFDE



FCED



1988 Awards Granted

A total of \$216,271 was approved for many varied projects during 1988, up substantially from \$158,715 in 1987. A few of these activities deserve special mention, be it for their magnitude, innovation, or simply their attempt to make the Canadian public more aware of the need for dental care.

By far CFDE's largest single project is still the joint Canadian Fund for Dental Education/Association of Canadian Faculties of Dentistry Summer Teaching and Management Institute, which has just completed its fourth year. In 1988, \$35,000 was granted to ACFD to run two concurrent institutes to train Dentist lecturers to teach and dental Division Heads and Department Chairpersons to manage. The results were outstanding again this year.

The Fund is seriously committed to this program. We are all indebted to its coordinator, Dr. John Eisner of Dalhousie University, as well as to Drs. David Chambers of the University of the Pacific, and Jim Spooner of the University of Saskatchewan, who provided the excellent instruction.

Another area in which CFDE is proud to grant money is in individual fellowships to graduate students who plan to return to a Canadian Faculty of Dentistry to teach or do further research. The 1988 recipients are:

Reapplicants

Dr. Gilles Gauthier
Dr. Patrice Milot

New Applicants

Dr. M. Herbert McLeod
Dr. Reginald Goodday
Dr. Timothy Foley
Dr. Randall D. Mazurat
Dr. Angelina Loo (also awarded an additional \$1,000 for the Henry M. Thornton Fellowship, given to the individual deemed to be the most outstanding fellowship recipient)

Warner-Lambert Fellowship
Dr. Olva Odlum (for short-term study by a current faculty member)

A total of \$27,000 was granted to these individuals.

In addition to the above education-related activities, CFDE also spends a great deal on dental awareness, an area which is also of concern to some of our largest donors. Of particular note is



Le Fonds a distribué, en 1988, une somme de 216 271 \$ pour soutenir une grande variété de projets, comparativement à 158 751 \$ en 1987. Certaines de ces initiatives méritent d'être soulignées à cause de leur ampleur, de leur caractère inédit ou des efforts qu'elles ont comporté pour sensibiliser davantage la population canadienne à l'importance des soins dentaires.

Les cours d'été en enseignement et en gestion, offerts conjointement par le Fonds canadien pour l'enseignement dentaire et l'Association des facultés dentaires du Canada, ont constitué le projet de loin le plus important subventionné par le FCED. En 1988, l'ACFD a ainsi reçu la somme de 35 000 \$ pour organiser deux cours simultanés, l'un pour former des dentistes à l'enseignement et l'autre pour former à la gestion des chefs de division ou de département. Le résultat fut de nouveau remarquable.

Les bourses de 1988

Ce programme engage sérieusement le Fonds. Nous en sommes redevables à son coordonnateur, le Dr John Eisner, de l'université Dalhousie, ainsi qu'aux Drs David Chambers, de l'Université du Pacifique, et Jim Spooner, de l'Université de la Saskatchewan, qui ont présenté des cours magistraux.

Une part importante des sommes que distribue le FCED est affectée à l'octroi de bourses individuelles aux jeunes diplômés qui ont l'intention de retourner à l'université pour y faire de l'enseignement ou de la recherche. Voici les récipiendaires de 1988.

Pour une deuxième bourse

*les Drs Gilles Gauthier
Patrice Milot*

Pour une première bourse

*les Drs M. Herbert McLeod
Reginald Goodday
Timothy Foley
Randall D. Mazurat
Angelina Loo*

(Elle a aussi reçu la bourse Henry M. Thornton, d'une valeur de 1 000 \$, attribuée au boursier qui s'est le plus signalé.)

Bourse Warner-Lambert le Dr Olva Odlum (La bourse est attribuée à un professeur pour de brèves études.)

Les bourses ainsi distribuées ont atteint la somme de 27 000 \$.

Par ailleurs, le FCED affecte de fortes sommes en matière de sensibilisation à la santé dentaire, sujet qui inté-



the \$35,000 donation for a second year in a row from Colgate-Palmolive Canada. This grant is earmarked for the CDA's "First Teeth" program, an awareness program for parents of young children.

CFDE also contributed to National Dental Health Month by sponsoring the CDA poster and to CDA's Conference on Infection Control, designed to increase the awareness of dentists and their staff members on the issues of proper infection control. In addition to CFDE's donation for this project, over \$11,000 was raised from industry and funnelled through the Fund.

I'm sure you would agree that dentistry would not be what it is today were it not for the team approach. CFDE grants funds to auxiliary groups, as well as to dentists, because of its strong belief in the importance of the dental team.

I am pleased to announce that Warner-Lambert Canada has agreed to fund a separate Warner-Lambert fellowship for hygiene educators. This will be similar to the fellowship for dental educators, in which hygienists have always been included, but will open the competition to community college teachers, instead of just university program educators.

A new approach was taken in 1988 to the Murray McDonald Memorial Lecture. Instead of the previously held lecture tour, CFDE took advantage of the focus of the CDA Convention in August to present Mr. Knowlton Nash as the second Murray McDonald Memorial Lecturer. Mr.

Nash spoke to a full house on the topic "History on the Run". CFDE was pleased with the results and plans to continue this type of lecture in 1989. Mr. Allan Fotheringham has been approached to speak at the Vancouver convention.

Highlights of 1988 Income

I am delighted to announce that CFDE has surpassed its budgeted goals for income in 1988. Our total income for 1988 was \$329,125, up from the budgeted \$279,000.

This increase was, in part, due to a growth in the number of donations from dental trade and industry. Through the efforts of staff and the industry representatives on the Board of Trustees, in conjunction with the staff of our corporate donors, last year's high level of industry support was maintained. Donations from business and industry totalled \$111,080.

One of the most innovative fundraisers launched in 1988 was the joint project with Teledyne Water Pik Canada. In recognition of professional recommendations for the use of a Water Pik dental system, Teledyne Water Pik contributes \$1.00 to CFDE. The 1988 donation was \$2,120, with hopes for an even greater donation in 1989. (This fundraising program does not imply endorsement of the product.)

Donations from dentists have also increased this year, from \$78,935 in 1987 to \$88,239. This extra \$10,000 is due in part to earmarked donations to the

resse de façon particulière certains de nos plus importants donateurs. Il convient de souligner ici le don de 35 000 \$ qu'a versé pour la deuxième année de suite la société Colgate-Palmolive Canada pour soutenir le programme « Les dents de lait » destiné aux parents des jeunes enfants.

Le FCED contribue au Mois national de la santé dentaire en finançant l'affiche de l'ADC. Il soutient également le séminaire sur la prévention de la contamination qui a pour objet de sensibiliser davantage les dentistes et leur personnel à cette question. Outre les sommes qu'il a lui-même versées, le Fonds a aussi recueilli à cette fin plus de 11 000 \$ auprès de l'industrie dentaire.

Vous reconnaîtrez, j'en suis certain, que l'exercice de la profession ne serait pas ce qu'il est aujourd'hui, si on n'y avait pas introduit l'esprit d'équipe. Le FCED apporte donc son aide aux groupes auxiliaires comme aux dentistes, parce qu'il croit en l'importance de cette équipe.

Il me fait donc plaisir d'annoncer que la société Warner-Lambert Canada a accepté de financer une bourse distincte pour les professeurs en hygiène dentaire. Cette bourse ressemblera à celle des professeurs d'université, auxquels les hygiénistes ont d'ailleurs toujours été associés, et étendra la compétition aux professeurs des collèges et cégeps.

Le fonds de la conférence Murray McDonald a été appliqué de façon différente en 1988. Plutôt que d'organiser une tournée de conférences, le FCED a profité de la tribune particulière qu'offrait le congrès du mois d'août pour

présenter M. Knowlton Nash à la deuxième conférence de cette série. Il a fait salle comble. Heureux de ce résultat, le FCED poursuivra dans la même veine en 1989 et il a invité M. Allan Fotheringham à prendre la parole au congrès de Vancouver.

Les principaux revenus de 1988

Il me fait grand plaisir d'annoncer qu'en 1988, la levée de fonds du FCED a dépassé l'objectif que nous nous étions fixé. Nous avons recueilli 329 125 \$, alors que nous avions prévu 279 000 \$.

Cette augmentation est attribuable, en partie, à un plus grand nombre de dons de la part de l'industrie dentaire. Les efforts du personnel et des représentants de l'industrie au sein du conseil des fiduciaires, de même que ceux du personnel des entreprises donatrices, ont permis de maintenir les contributions au niveau élevé de l'année précédente et de recueillir ainsi une somme de 111 080 \$.

L'une des façons les plus innovatrices de recueillir des fonds a été lancée en 1988 avec la participation de Teledyne Water Pik Canada. Pour chaque système de nettoyage des dents Water Pik recommandé par un dentiste, la compagnie verse 1 \$ au FCED. La compagnie a ainsi versé 2 120 \$ au fonds en 1988 et s'attend à faire davantage en 1989. (Cette façon de recueillir des fonds n'implique pas l'approbation du produit.)

Les dons des dentistes ont aussi augmenté cette année, passant de 78 935 \$ à 88 239 \$. La hausse de

Dr. Nicholas A. Mancini Scholarship Fund (\$3,958) and to the Murray McDonald Memorial Fund (\$1,233).

It would appear that most dentists appreciated the new contribution card developed by CFDE in 1988 to assist them in allocating all or part of their donation. Without this card, the above two funds may not have seen the growth they did in 1988.

Dental organizations were also very good to CFDE this year. Donations from this sector are up by \$8,000 to \$30,190. I must also express the Trustees' gratitude to all of the organizations which also offer less tangible support to CFDE by publishing its news releases, its advertisements and by promoting its importance at their meetings.

A special note of thanks must be extended to dental students and faculty members in all of the dental schools across Canada. Their continued efforts to raise funds for CFDE truly benefit Canadian dentistry.

Dental hygienists across Canada increased their level of donations in 1988. The Board of Trustees feels, however, that even more hygienists could be donating to CFDE. Staff members will continue to work with the leaders of the Canadian Dental Hygienists' Association to increase awareness of the Fund among its members.

Even with interest rates bordering on mediocre for the most part of 1988, our investment income grew by \$232 to \$60,218. It is hoped that, with higher rates in 1989 and more long-term investments, interest income will once again

surpass the budgeted amount.

I was very pleased with the Fund's performance during my first year as chairman. I would be remiss, however, if I did not thank Dr. Fred Reid, former Chairman, for the very solid groundwork he laid for me. Appreciation must also be extended to the members of the Board of Trustees and Ms. Janice Forsythe, Executive Secretary, who have also taken an active role in building the Fund this year.

On behalf of CFDE, I would like to express my appreciation to those who donate to the Fund and to those who apply for its assistance, giving CFDE its raison d'être.

Respectfully submitted,



Ted Ramage, D.D.S.
Chairman,
CFDE Board of Trustees

The Board of Trustees extends its appreciation to Mr. Steve Landry of Midland Doherty Ltd. in Toronto who generously donates his time and guidance to assist the Fund in maintaining a healthy investment portfolio.

Our records have been audited by Thorne Ernst & Whinney. A copy of their report is available on request.

10 000 \$ est attribuable en partie à des dons de 3 958 \$ au fonds Nicholas A. Mancini et à des dons de 1 233 \$ au fonds Murray McDonald.

Il semble que les dentistes ont apprécié, pour la plupart, la nouvelle carte que le FCED a mise au point en 1988 pour les aider à répartir leurs dons. Sans cette carte, les deux fonds mentionnés ci-dessus ne se seraient pas accrus d'autant en 1988.

Les organisations dentaires se sont aussi montrées généreuses. Les dons qu'elles ont versés en 1988 ont atteint 30 190 \$, soit 8 000 \$ de plus que l'année précédente. Je dois aussi exprimer la gratitude des fiduciaires à l'endroit de toutes les organisations qui assurent au FCED un appui peut-être moins visible mais réel en publiant ses communiqués et ses annonces et en soulignant son importance à leur réunions.

Des remerciements particuliers s'adressent aux étudiants et aux professeurs des écoles dentaires du pays. Par leurs efforts soutenus pour recueillir des fonds, ils rendent un réel service à la profession.

Les contributions des hygiénistes dentaires du pays ont aussi augmenté en 1988. Les fiduciaires estiment cependant qu'un plus grand nombre d'hygiénistes devraient faire leur part. Le personnel continuera de seconder les dirigeantes de l'Association canadienne des hygiénistes dentaires dans leurs efforts pour sensibiliser leurs membres.

Malgré des taux d'intérêts plutôt médiocres la plupart du temps, le revenu des placements a augmenté de 232 \$ pour atteindre 60 218 \$. J'espère que des taux plus

élevés et plus de placements à long terme nous permettront de dépasser en 1989 le revenu prévu au budget.

Je suis bien satisfait de la performance du Fonds pendant cette première année de présidence. Je ne saurais, cependant, oublier de remercier mon prédécesseur, le Dr Fred Reid, qui m'a si bien préparé la tâche. Merci également aux membres du conseil des fiduciaires et à madame Janice Forsythe, secrétaire exécutif, qui ont activement contribué à bâtir le Fonds au cours de l'année.

Au nom du FCED, j'adresse enfin mes remerciements à tous les donateurs et à tous ceux et celles qui ont fait appel au FCED, justifiant ainsi sa raison d'être.

Je vous prie d'agréer l'expression de mes sentiments respectueux.

Le président du Conseil des fiduciaires du FCED,



Ted Ramage, D.D.S.

Le conseil des fiduciaires désire remercier Monsieur Steve Landry de la compagnie Midland Doherty Ltée de Toronto qui a su donner si généreusement de son temps et de son expertise. Ses conseils nous ont été indispensables à gérer notre portefeuille d'investissements.

Notre comptabilité a été vérifiée par Thorne Ernst & Whinney. On pourra se procurer un exemplaire de leur rapport en faisant une demande à cet effet.



Income by Source

Revenus et provenance

Business and industry <i>Entreprises et industrie</i>	\$111,080	35.1%
Dental Profession <i>Profession dentaire</i>	88,239	28.1
Investment and sundry income <i>Revenus de placements et de sources diverses</i>	72,421	23.1
Dental organizations <i>Organismes dentaires</i>	30,190	10.0
In Memoriam <i>Dons commémoratifs</i>	8,875	3.0
Dental Hygienists <i>Hygiénistes dentaires</i>	1,385	0.5
Tributes and other contributors <i>Hommages et autres contributions</i>	650	0.2
TOTAL	\$324,941	100.0%

Dentistry has been enhanced by these grants

La médecine dentaire a progressé grâce à ces subventions

Dental health month, "First Teeth", infection control, and other public awareness programs <i>Mois de la santé dentaire et autres programmes d'information</i>	\$66,100	30.0
Summer program to improve teaching à skills of dental faculty members <i>Programme d'été de perfectionnement des compétences pédagogiques des membres des facultés dentaires</i>	35,000	16.0
Grants to dental schools <i>Subventions à des écoles dentaires</i>	35,000	16.0
Teacher training fellowships (Dentists & Dental Hygienists) <i>Bourses de formation en enseignement (Dentistes & Hygiénistes dentaires)</i>	27,000	12.0
Student table clinics and conference <i>Conférence et exposés d'étudiants</i>	16,300	7.3
Dr. Lorne E. MacLachlan Endowment/ Teacher training awards <i>Fonds de dotation Dr. Lorne E. MacLachlan/ Bourses de formation d'enseignants</i>	12,868	5.7
Dental Conferences <i>Conférence sur l'enseignement de la médecine dentaire appliquée à la planification stratégique</i>	12,000	5.3
Dental auxiliary projects <i>Atelier d'hygiène dentaire et projets de formation</i>	8,100	3.6
Videodisc Teaching Document	5,000	2.1
Murray M. McDonald Memorial Lecture <i>Conférence commémorative: Murray M. McDonald</i>	4,500	2.0
TOTAL	\$216,271	100.0%



BUSINESS, INDUSTRY AND DENTAL ORGANIZATIONS

- Contributor for 15 years or more

ENTREPRISES, INDUSTRIE ET ORGANISMES DENTAIRE

- Donateur depuis 15 ans ou plus

Sustaining Members Membres de Soutien (\$2,000 — \$3,499)

- Dental Industries Association of Canada, Rexdale, Ontario
- Frank W. Horner Inc., Montreal, P.Q.
- Kerr Canada, Mississauga, Ontario
- Ontario Dental Association, Toronto, Ontario
- Royal College of Dental Surgeons of Ontario, Toronto, Ont.
- Teledyne Water Pik Canada, Rexdale, Ontario
- Wrigley Canada Inc., Don Mills, Ontario

Supporting Members Collaborateurs (\$1,000 — \$1,999)

- 3M Canada Inc., London, Ontario
- A-DEC, Newberg, Oregon
- Alberta Dental Association, Edmonton, Alberta
- Canadian Dental Hygienists' Association, Ottawa, Ontario
- Clift's Dental Supplies Ltd., St. John's, Newfoundland
- College of Dental Surgeons of B.C., Vancouver, B.C.
- Denco/Canada Dental, Montreal, P.Q.
- Dépôt Dentaire (Canada) Limitée and Healthco (Canada) Limited, Montréal, P.Q.
- International College of Dentists, Toronto, Ontario
- Johnson & Johnson, Montreal, P.Q.
- Manitoba Dental Association, Winnipeg, Manitoba
- Takara-Belmont, Mississauga, Ontario

Contributing Members Donateurs (\$500 — \$999)

- Astra Pharmaceutical Inc., Mississauga, Ontario
- Aurum Ceramic, Calgary, Alberta
- Beavers Dental, Morrisburg, Ontario
- Buffalo Dental, Cambridge, Ontario
- Capcad Inc., Winnipeg, Manitoba
- College of Dental Surgeons of Saskatoon, Saskatoon
- Columbus Dental Company, St-Louis, Missouri

- Great-West Life Assurance Co., Winnipeg, Manitoba
- HCC Hygenic Corp. of Canada Inc., St. Catharines, Ont.
- Kodak Canada Inc., Toronto, Ontario
- Merck Frosst Canada, Pointe-Claire, P.Q.
- New Brunswick Dental Society, Saint John, N.B.
- Nobilium Canada Inc., Toronto, Ontario
- Peace River District Dental Society, Fairview, Alberta
- Royal Canadian Dental Corps, Ottawa, Ontario
- Sask. Southwest Dental Society, Swift Current, Saskatchewan
- Sci-Can Inc., Toronto, Ontario
- Seaboard Life, Vancouver, B.C.
- Siemens Electric Ltd., Mississauga, Ontario
- Williams Dental Co., Fort Erie, Ontario

- Royal Bank of Canada, Montréal, P.Q.
- Sterling Drug Ltd., Aurora, Ontario
- Students' Dental Society, University of Saskatchewan, Saskatoon, Sask.
- Teledyne Hanau, Buffalo, New York
- Teledyne Getz, Los Angeles, California
- Trident Health Care Inc., Toronto, Ontario
- University of Alberta Dental Students' Association, Edmonton, Alberta
- University of Western Ontario Dental Students' Society, London, Ontario
- Wright Dental Canada, Richmond Hill, Ontario

Although individual names are not listed, the Fund's Trustees also wish to express their gratitude for the many smaller gifts received from various organizations.

Bien que les noms individuels ne soient pas cités, les fiduciaires du Fonds désirent exprimer leur appréciation reconnaissante pour les nombreux dons plus modestes provenant de divers organismes.

Subscribers Adhérents (\$100 — \$499)

- Alberta Dental Hygienists Association, Calgary, Alberta
- Association des étudiants de médecine dentaire de l'Université Laval, Québec
- Association des étudiants de médecine dentaire de l'Université de Montréal, Montréal, Québec
- Central Dental Ltd., Toronto, Ontario
- Dalhousie Dental Student Society, Halifax, N.S.
- Den-Tal-Ez, New York
- Dental Association of P.E.I., Charlottetown, P.E.I.
- Dentrix Dentalcare, Calgary, Alberta
- Hu-Friedy Manufacturing Company, Chicago, Illinois
- McNeil Consumer Products Company, Guelph, Ontario
- Medi-Scope Professional Products Ltd., Toronto, Ontario
- Microbex, Markham, Ontario
- Modular & Custom Cabinets Ltd., Maple, Ontario
- North Shore Dental Society, Tracadie, N.B.
- Ontario Dental Hygienists' Association, Hamilton, Ont.
- Regina & District Dental Society, Regina, Saskatchewan
- Rocky Mountain Orthodontics Canada Ltd., Scarborough, Ont.

Endowment Foundations Fonds de dotation

Over the years foundations have been set up on behalf of the following people:

Dr. Lorne E. MacLachlan
Mr. Murray M. McDonald
Dr. George W. Barrett
Dr. Nicholas A. Mancini

Des fonds de dotation ont été établis au nom des personnes suivantes:

*Docteur Lorne E. MacLachlan
Monsieur Murray M. McDonald
Docteur George W. Barrett
Docteur Nicholas A. Mancini*

Patrons Commanditaires (\$5,000 — \$9,999)

- Ash Temple Ltd., Don Mills, Ontario
- Norex Leasing (Medi-Dent Service), Burlington, Ontario
- Warner-Lambert Canada Inc., Scarborough, Ontario

Benefactors Bienfaiteurs (\$3,500 — \$4,999)

- Canadian Dental Service Plans Inc., Willowdale, Ontario



British Columbia/ Colombie Britannique

Patrons/Bienfaiteurs (\$250 and over — *et plus*)

Boyd, M., Vancouver
Cheung, K., Burnaby
Chou, W., Vancouver
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MacFarlane, D., Vancouver
Markey, R., Vancouver
Plumb, B., Vancouver
Ramage, T., Vancouver
Reid, J., West Vancouver
Snider, I., Vancouver

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Copithorne, F., Vancouver
Fast, G., Merritt
Fraser, J., Vancouver
Fukushima, E., Vancouver
Gallon, L., N. Vancouver
Lambert, D., Delta
Lo, F., Prince George
Matthews, J., Vernon
Rosebush, W., Vancouver
Trester, P., Vancouver
Wray, D., Vernon
Wright, O., Vancouver

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Aoyama, R., Prince George
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Beaton, R., Richmond
Bing, D., Pitt Meadows
Blasberg, B., Vancouver
Bradey, B., Richmond
Brass, J., Golden
Brunette, D., Vancouver
Carswell, D., Fort St. John
Chesko, E., West Vancouver

Chilibeck, R., Victoria
Chiu, A., Burnaby
Clarke, R., West Vancouver
Crosson, P., Nanaimo
Culham, M., Nelson
Decamillis, R., North Vancouver
Derkson, G., Vancouver
Dey, A., West Vancouver
Dickson, R., Victoria
Diewert, V., Vancouver
Donaldson, D., Vancouver
Duke, E., Surrey
Enns, C., Kamloops
Fantin, T., Trail
Foulkes, J., Salmon Arm
Froese, F., Kelowna
Fulton, R., Coquitlam
Gibson, G., Port Coquitlam
Gould, T., Vancouver
Green, D., West Vancouver
Hallett, E., Coquitlam
Hann, H., Vancouver
Henderson, H., Pitt Meadows
Hornibrook, J., Vancouver
Kirson, S., Vancouver
Klein, H., Vancouver
Kline, T., Vancouver
Kovits, J., Sardis
Lepp, V., Terrace
Letham, R., Salmon Arm
Liebert, H., Aldergrove
Lin, B., Vancouver
Louie, W., Vancouver
Lowe, S., Vancouver
MacIntosh, J., Campbell River
Manders, P., Summerland
Margetts, F., Sidney
Martin, T., Kelowna
Mason, C., New Westminster
Mickelson, M., Vancouver
Mills, C., Vancouver
Mori, R., Salmon Arm
Nasedkin, J., Vancouver
Neal, D., Sidney
Porteous, W., Vancouver
Rasul, S., Vancouver
Remocker, G., Burnaby
Ross, A., Vancouver
Sandbrand, J., Vancouver
Savoie, F., Nanaimo
Schneider, M., Vancouver
Scott, H., Vancouver
Silver, J., Vancouver
Smith, R., Duncan
Smulders, S., Aldergrove
Soo, F., Richmond
Soon, S., Mission
SoroChan, R., Nanaimo
Sproule, W., Vancouver

Steinbart, A., Prince George
Stich, J., Vancouver
Strukoff, B., Chilliwack
Sussel, W., Chilliwack
Swanson, A., Vancouver
Takahashi, D., Kamloops
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Tonzetich, J., Vancouver
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Tymkiw, E., Vernon
Tyrmont Management Ltd.,
Penticton
Vanry, S., Vancouver
Vigneault, P., Vancouver
Walsh, R., Victoria
Waterfield, J., Vancouver
Weaver, B., N. Vancouver
Witt, P., Delta
Wolverton, H., Vancouver
Yip, J., Delta
Zucchiatti, J., Terrace

Alberta

Patrons/Bienfaiteurs (\$250 and over — *et plus*)

Alberta Dental Management
Allison, E., Calgary
Carlyle, T., Edmonton
Courtright, P., Calgary
Earl, N., Calgary
Florence, R., Edmonton
Sigfstead, B., Edmonton
Sonntag, C., Medicine Hat
Thomas, N., Edmonton
Thompson, G., Edmonton
Thompson, J., Calgary
Turner, R., Stony Plain

Honour Members/ Membres d'honneur (\$150 — \$249)

Bell, R., Airdrie
Bene, A., Edmonton
Blackett, J., Edmonton
Cram, R., Red Deer

Dick, H., Edmonton
Dyer, W., Calgary
Fleming, B., Red Deer
Foster, G., Calgary
Gerald, M., Calgary
Green, D., Calgary
Greenaway, J., Edmonton
Ho, C., Airdrie
Little, J., Edmonton
Lizaire, A., Edmonton
Nordstrom, S., Grande Prairie
Prybysh, A., Fairview
Quinn, H., Grande Prairie
Sandercock, G., Peace River
Sharun, W., Edmonton
Stepanko, W., Grande Prairie
Vincelli, D., Calgary
Watson, R., Calgary

Members/Membres (\$50 — \$149)

Adler, B., Edmonton
Albinati, M., Calgary
Amundsen, P., Blairmore
Audenart, M., Vermilion
Bailey, T., Calgary
Bailey, T., Calgary
Barr, R., Medicine Hat
Beauchamp, R., Edmonton
Bedard, D., Edmonton
Braunberger, G., Calgary
Breault, R., Edmonton
Brouwer, A., Red Deer
Bryant, R., Lethbridge
Cann, C., Grand Centre
Chabaylo, G., Red Deer
Chapman, P., Calgary
Chiu, T., Edmonton
Clark, G., Claresholm
Coupland, R., Red Deer
Cox, R., Edmonton
Cumberland, D., Red Deer
Dimitrov, A., Edmonton
Dmytruk, R., Edmonton
Duke, C., Edmonton
Edwards, R., Calgary
Fiorillo, A., Edmonton
Fletcher, D., Lethbridge
Fong, G., Lethbridge
Frydman, A., Calgary
Gallagher, S., Lethbridge
Garden, A., Medicine Hat
Gardenia, A., Medicine Hat
Goldfeldt, D., Calgary
Gotaas, P., Edmonton



Grigoruk, A., Calgary
Harle, G., Edmonton
Hawrish, C., Edmonton
Headley, R., Calgary
Hennings, M., Bow Valley
Hoshizaki, S., Edmonton
Houston, G., Medicine Hat
Hui, F., Edmonton
Hurtig, A., Calgary
Kjorven, L., Red Deer
Kott, L., Edmonton
Kudryk, K., Denwood
Lazaruk, S., Edmonton
Leicht, R., Edmonton
Leroy, B., Edmonton
Lloyd, D., Edmonton
Long, W., Calgary
Longley, B., Didsbury
Luxford, P., Calgary
Mahoney, T., Wetaskiwin
Martinello, B., Edmonton
Mathieson, J., Edmonton
McGaw, W., Edmonton
McLean, J., Edmonton
McNichol, C., Calgary
Miller, M., Edmonton
Moore, L., Edmonton
Mulcahy, D., Edmonton
Nauss, W., Calgary
Osadetz, C., Edmonton
Panylyk, K., Hinton
Polischuk, D., Lloydminster
Primrose, W., Edmonton
Provan, R., Calgary
Rakochev, E., Edmonton
Ross, A., Lloydminster
Rumball, T., Peace River
Sam, C., Strathmore
Scott, D., Edmonton
Secter, S., Calgary
Slubik, E., Red Deer
Smorang, T., Calgary
Snedden, J., Medicine Hat
Soklofske, A., Medicine Hat
Sperber, G., Edmonton
Stauffer, G., Lethbridge
Stonehocker, E., Calgary
Street, G., Calgary
Swartout, H., Edmonton
Taskey, M., Edmonton
Titiryn, R., Edmonton
Upton, D., Calgary
Wall, J., St. Albert
Warren, J., Calgary
Warren, M., Calgary
Wolfaardt, J., Edmonton
Yaholnitsky, B., Calgary
Young, J., Edmonton
Yu, C., Edmonton

Yue, C., Calgary
Zier-Vogel, R., Hinton

Saskatchewan

Patrons/Bienfaiteurs (\$250 and over — et plus)

Ambrose, E., Saskatoon
Graas, A., Moose Jaw
Tataryn, P., Meadow Lake

Honour Members/ Membres d'honneur (\$150 — \$249)

Bourassa, F., Regina
Graham, D., Regina
Harder, L., N. Battleford
Karasin, A., Saskatoon
Loffler, J., Regina
Loney, R., Saskatoon
Moulding, M., Saskatoon
Sutherland, J., Saskatoon

Members/Membres (\$50 — \$149)

Amundrud, D., Saskatoon
Baker, B., Indian Head
Bode, G., Yorkton
Brett, E., Regina
Cottenie, K., Yorkton
Dey, C., Kamsack
Fraser, R., Prince Albert
Gershman, D., Prince Alberta
Gilliland, R., Saskatoon
Grieman, R., Regina
Jen, S., Saskatoon
Kolbinson, D., Saskatoon
Koroluk, L., Saskatoon
Korpus, D., Regina
Kushneriuk, J., Prince Albert
Livingstone, J., Saskatoon
Mang, B., Regina
Natrass, M., Regina
Niedermayer, J., Regina
Peacock, G., Saskatoon

Phillips, D., Nipawin
Racine, R., Saskatoon
Ross, A., Regina
Shiffman, J., Saskatoon
Singer, D., Saskatoon
Teplitsky, P., Saskatoon
Tessier, R., Moose Jaw
Thomas, D., Regina
Thomson, W., Assiniboia
White, B., Saskatoon
Wihak, F., Regina
Wilson, J., Saskatoon

Manitoba

Patrons/Bienfaiteurs (\$250 and over — et plus)

Assiniboine Dental Group,
Winnipeg
Campbell, W., Winnipeg

Honour Members/ Membres d'honneur (\$150 — \$249)

Anonymous
Agnew, E., Brandon
Boyar, R., Winnipeg
Crawford, R., Winnipeg
Levin, K., Winnipeg
Perry, J., Winnipeg
Schwartz, A., Winnipeg
Wright, J., Winnipeg

Members/Membres (\$50 — \$149)

Allen, L., Winnipeg
Austman, G., Steinbach
Baluta, J., Winnipeg
Bannerman, J., Winnipeg
Banning Enterprises,
Winnipeg
Bernstein, M., Winnipeg
Bonar, J., Deloraine
Borden, S., Winnipeg
Brass, G., Winnipeg
Buettner, M., Winnipeg

Carrington, D., Stony Mountain
Cherewan, G., Winnipeg
Christie, W., Winnipeg
Dawes, C., Winnipeg
Dhami, M., Winnipeg
Fedorowich, N., Hamiota
Goerz, D., Morden
Grenkow, R., Winnipeg
Heschuk, S., Dauphin
Hoepfner, H., Morden
Hunt, R., Winnipeg
Jaek, K., Winnipeg
James, L., Winnipeg
Kahane, L., Winnipeg
Kiazzyk, C., Beausejour
Lachance, A., St-Boniface
Lancis, V., Winnipeg
Louka, A., Winnipeg
Love, B., Winnipeg
Lyttle, H., Winnipeg
Milnes, A., Winnipeg
Odlum, O., Winnipeg
Ollinik, F., Morden
Osborn, A., Winnipeg
Pernarowski, M., Dauphin
Richardson, L., Winnipeg
Roehm, E., Morden
Scarpino, C., Winnipeg
Semchyshyn, M., Winnipeg
Shepertycky, M., Winnipeg
Short, F., Winnipeg
Sonya, D., Winnipeg
Stillwater, J., Winnipeg
Stockton, J., Winnipeg
Stockton, L., Winnipeg
Vinsky, I., Winnipeg
Williams, P., Winnipeg
Yauck, E., Flin Flon

Ontario

Patrons/Bienfaiteurs (\$250 and over — et plus)

Adams, R., Cambridge
Allen, D., Windsor
Anglin, W., Stirling
Biewald, H., Ottawa



Bradley, G., Picton
Brooke, R., London
Bunt, D., Trenton
Burgess, R., Toronto
Davis, J., Belleville
Dean, P., Barrie
Deyette, M., Orleans
Dixon, E., Belleville
Edmison, P., Ottawa
Elliot, H., Belleville
Evans, R., Picton
Feasby, W., London
Gray, P., Barrys Bay
Harper, B., Little Current
Harrison, J., Picton
Hedley, F., Petawawa
Hipkin, G., Belleville
Hurd, B., Burlington
Knutson, P., Belleville
Kost, W., London
Lague, G., Brantford
Letersky, J., Belleville
Limeback, H., Toronto
McWhirter, R., Belleville
Miller, D., Oshawa
Morris, G., Oakville
Orenchuk, R., Barrie
Patrick, W., Trenton
Rackham, L., Belleville
Rajan, W., Tweed
Roach, K., Pembroke
Roy, P., Ottawa
Sills, P., London
Spence, W., Toronto
Stapleford, R., Windsor
Ter Haar, J., Belleville
Tucker, G., Belleville
Williams, B., Windsor
Wilson, A., Windsor
Zakarow, P., Oshawa

Cooper, M., Toronto
Dagys, A., Scarborough
Dolansky, B., Ottawa
Doner, R., Brockville
Dunn, W., London
Hahn, N., Toronto
Harris, A., Komoka
Hersh, H., Cambridge
Hoerner, F., Toronto
Jackson, M., Toronto
Jaeger, H., Cambridge
Kajiura, D., Orleans
Kelso, B., Ottawa
Lawton, D., Harrow
Lewis, R., Etobicoke
Lin, C., London
McKegney, R., Toronto
McSweeney, K., Kitchener
Moreau, M., Kitchener
Osepchok, D., Ottawa
Owen, M., Wawa
Page, D., Windsor
Paterson, D., Windsor
Pearson, M., Cambridge
Perlmutter, M., Willowdale
Richmond, J., Trenton
Schatz, S., Scarborough
Scott, P., Toronto
Shaw, J., Ottawa
Slater, M., Downsview
Spencer, D., London
Stasko, J., Windsor
Taylor, B., London
Tortorella, F., St. Catharines
Turner, D., Ottawa
Walden, G., London
Wayne, W., Ottawa
Woodall, G., Milton

**Members/Membres
(\$50 — \$149)**

Abrahams, E., Ottawa
Alexis, J., North York
Allen, D., Port Elgin
Amalgam Holdings Inc.,
Oshawa
Anderson, D., Kingston
Anderson, D., Toronto
Anderson, F., Collingwood
Angelov, K., Toronto
Anker, G., Toronto
Armstrong, L., Kenora
Asling, J., Hanover
Asling, P., Uxbridge

Baechler, J., Manotick
Baird, K., London
Balogh, G., London
Balogh, L., London
Banting, D., London
Bartalos, R., Ancaster
Bastian, R., Peterborough
Beauprie, D., Deep River
Begin, F., Orleans
Bell, D., Ottawa
Bishop, B., Bancroft
Boucher, G., Penetanguishene
Boulos, N., Etobicoke
Bozek, R., Burlington
Branscombe, E., Toronto
Brenner, M., Barrie
Brookfield, J., Kirkland Lake
Brown, E., Woodstock
Bruce, R., Kincardine
Brunet, M., Ottawa
Bubola, R., Guelph
Burgman, G., Kirkland
Busvek, E., St. Thomas
Bye, M., Owen Sound
Caine, D., London
Carpenter, I., Ottawa
Catran, C., Bowmanville
Chabrol, J., Landing
Chapnick, B., Toronto
Chaytor, B., Oshawa
Chernin, S., Scarborough
Chiang, S., Scarborough
Christilaw, J., Hamilton
Clappison, R., Toronto
Clark, B., Tillsonburg
Clinton, R., Kingston
Cluett, A., London
Clumpus, F., Sudbury
Cohen, D., Guelph
Cole, B., Peterborough
Corti, F., Sarnia
Cowan, D., Toronto
Cox, T., Guelph
Cripps, C., Carp
Crowe, D., Barrie
Cunningham, G., London
Cunningham, W., London
Currie, D., Ottawa
Davis, A., Thornhill
Davis, J., Timmins
Degiacomo, P., Thunder Bay
Destephanis, J., Hamilton
Duggan, J., Stratford
Dulmage, D., Dunnville
Dunec, A., Toronto
Earle, S., Ottawa
Eckhaus, F., Willowdale
Ellis, B., Toronto
Ellis, R., Toronto

Ellis, W., Kitchener
Farquharson, R., Cobourg
Fasken, J., Oakville
Fawcett, J., Lindsay
Fejes, J., Windsor
Fenton, A., Toronto
Ferguson, H., Willowdale
Ferry, T., Toronto
Fisk, R., Toronto
Flewelling, S., Toronto
Francis, D., Timmins
Freedman, H., Toronto
Friedl, W., Windsor
Fuzy, K., Windsor
Fuzy, S., Windsor
Gillan, R., Brockville
Gold, P., Toronto
Goldfarb, A., London
Good, C., Kitchener
Gorchynski, D., Kanata
Greenland, L., Scarborough
Grenier, G., Ottawa
Grose, R., Toronto
Haas, D., Toronto
Haeberlin, J., Tweed
Hamilton, R., Oakville
Hanmer, D., Toronto
Hare, P., Blenheim
Hartleib, M., Kitchener
Hartleib, P., Kitchener
Harvey, R., London
Hendry, R., Kitchener
Hicks, J., Hamilton
Hoffer, A., Toronto
Holloway, N., Sarnia
Holmes, B., Kenora
Hornis, J., Bramalea
Hrabowsky, I., St. Catharines
Hunter, H., Toronto
Hunter, R., Uxbridge
Hurst, E., Nobleton
Hyland, W., Scarborough
Imperius, E., Thunder Bay
Ip, K., Mississauga
Iwanowski, T., North Bay
Jack, R., Kitchener
Jacobson, K., Thunder Bay
Jakel, B., Gloucester
Joe, A., Weston
Johnson, T., Lindsay
Johnston, W., Martintown
Jolley, H., Toronto
Jurczak, E., Richmond Hill
Jurmalielis, B., Pembroke
Kearney, B., Nepean
Kennedy, E., Windsor
Kenny, D., Toronto
Knowles, J., Fergus
Knox, E., Cambridge

**Honour Members/
Membres d'honneur
(\$150 — \$249)**

Armstrong, W., Alliston
Barlow, T., Hamilton
Beck, P., Toronto
Blumenthal, A., Windsor
Boccia, A., Toronto
Bosse, S., Cornwall
Brandon, R., London
Brode, D., Windsor
Burman, D., Toronto
Chambers, D., Barrie
Chou, N., Windsor



Kogon, S., London
Kohn, T., Downsview
Kyle, W., Burlington
Lazar, J., Willowdale
Le, D., Toronto
Lee, G., Clinton
Lee, L., Toronto
Lemieux, M., Orleans
Leppert, D., Bowmanville
Leskiw, W., Niagara Falls
Levin, L., Toronto
Levin, P., Mississauga
Levine, N., Toronto
Ley, K., Guelph
Li, M., Ottawa
Lightman, I., Toronto
Lingard, R., Exeter
Little, G., Niagara Falls
Lord, W., Bancroft
Lung, C., Agincourt
Lysak, D., Thunder Bay
Lysyk, G., Oshawa
MacDonald, B., Mississauga
MacDonald, R., Kincardine
MacInnis, R., Niagara Falls
MacLean, D., London
MacSween, E., Rockcliffe
Macartney, E., Ottawa
Mackle, J., Alliston
Magne, G., Dresden
Malik, T., Burlington
Manilla, L., Willowdale
Manswell, H., Agincourt
Marion, H., Pembroke
Martin, J., Toronto
Martin, R., St. Thomas
McDonald, J., Ottawa
McDowell, D., Timmins
McIntyre, T., Barrie
McKay, T., Ridgeway
McNab, R., Port Perry
McNeill, G., Thunder Bay
Medland, D., Milton
Metrick, L., Ottawa
Mills, A., London
Mills, W., Toronto
Misek, W., Brampton
Mitchinson, J., Niagara Falls
Moore, D., Orillia
Munro, N., Willowdale
Munroe, C., Stratford
Murphy, W., Stouffville
Nabeta, Y., Oakville
Nakashima, S., Toronto
Nelson, R., Peterborough
Nodelman, A., Ottawa
Norman, M., Ottawa
Novakovic, D., Mississauga
O'Connor, D., Ottawa

O'Neill, E., Kingston
Olijnyk, B., Kitchener
Ong, L., London
Oper, T., Windsor
Orfus, H., Rexdale
Orschel, N., Richmond Hill
Panzer, M., Toronto
Pearson, G., Willowdale
Pedlar, L., Burlington
Peltoniemi, A., Toronto
Peltoniemi, R., Thunder Bay
Peters, D., Goderich
Peters, J., Goderich
Petrisor, A., Woodstock
Pileski, R., Hamilton
Plotzke, O., London
Popovich, F., Burlington
Pownall, K., Toronto
Psutka, D., Mississauga
Pudwill, D., Cambridge
Reid, D., Ottawa
Reine, L., Etobicoke
Remillong, G., Windsor
Rice, F., Oakville
Richmond, A., Toronto
Robertson, J., Kitchener
Rogers, L., London
Rondeau, B., London
Rouble, G., Renfrew
Salvati, R., Downsview
Sandelli, J., Port Colborne
Sapoka, A., Etobicoke
Scanlon, D., Penetanguishene
Schofield, I., London
Scott, G., Hamilton
Sedore, S., Aurora
Shewchuk, W., Ottawa
Shlapak, P., Oshawa
Siegel, I., Toronto
Siroky, H., Englehart
Solanki, V., Kitchener
Sorensen, A., London
Speck, J., Toronto
Stansfield, J., Belleville
Stasiak, R., St. Catharines
Stauffert, H., Barrie
Stirling, G., Toronto
Strain, D., Etobicoke
Sullivan, R., Orillia
Swaine, T., Kingston
Sweetnam, G., Lindsay
Szilock, R., Waterloo
Thain, R., Embrun
Thompson, W., Trenton
Tile, H., Don Mills
Tokiwa, J., Toronto
Tonnu, L., Toronto
Trull, R., Mississauga
Tulumello, A., Welland

Vachon, A., Cornwall
Valcheff, G., Brantford
Valenzano, L., Toronto
Venditti, B., Toronto
Vogl, W., Toronto
Waese, S., Willowdale
Walshaw, P., Toronto
Watkins, M., Gloucester
Weinberg, S., Toronto
Whitely, A., Oakville
Whyte, R., Arnprior
Willard, J., Chatham
Williams, B., Brantford
Yakasovich, R., Sault Ste.
Marie
Young, C., Pembroke
Zietsma, F., Burlington

Beauparlant, P., Laval
Begin, J., Montréal
Bentley, K., Montréal
Bernard, D., Amos
Brunelle, A., Pte-Gatineau
Camarda, J., Montréal
Canonne, P., Westmount
Champagne, M., Montréal
Charbonneau, B., Outremont
Charland, R., Brossard
Chartrand, F., St-Laurent
Chaumont, A., Laval
Clinique Dentaire St-Bruno
Inc., LaBaie
Clinique Dentaire Corbeil
Perrier Mailly, Val d'Or
Clinique Dentaire Couture
Dupont, Montréal
Couture, J., Québec
Couture, L., Pierrefonds
Crutchfield, B., Québec
Daigle, L., Montréal
Dallaire, J., Lachute
Dallaire, S., Beauce
David, R., Montréal
Demirjian, A., Montréal
De Montigny, G., Montréal
Dubé, L., Sherbrooke
Ducharme, D., Montréal
Dufault, R., St-Hubert
Dupuis, M., Shawinigan-Sud
Edmison, R., Hudson Heights
Faigan, H., Cote St-Luc
Fortin, J., Laval
Gagnon, P., Ste-Foy
Gampel, P., Westmount
Goldenberg, E., Pointe-Claire
Grégoire, H., Hull
Grise, P.J., St-Lambert
Head, T., Montréal
Hirsh, H., Montréal
Huot, R., Maniwaki
Jahjah, M., Montréal
Jenne, R., Beaconsfield
Jones, R., Montréal
Kadowaki, R., Roxboro
Kandelman, D., Montréal
Katz, I., Montréal
Lachance, G., Ste-Foy
Le, T., Montréal
Legault, J., Roxboro
Leith, D., Dorval
Lepage, G., Lévis
Lussier, L., St-Lambert
Lussier, J., Montréal
Maliska, J., Montréal
Maranda, G., Québec
Marcil, B., Ste-Thérèse
Meunier, R., St-Bruno

Québec

Patrons/Bienfaiteurs (\$250 and over — *et plus*)

Lamarche, C., Montréal

Honour Members/ Membres d'honneur (\$150 — \$249)

Emery, J., Montréal
MacDougall, G., Lennoxville
Miller, S., Pointe-Claire
Rosen, H., Montréal
Dubé, G., Lachute
Lafontaine, J., Hull
McLeod, J., Montréal

Members/Membres (\$50 — \$149)

Albert, G., Montréal
Androustos, E., Montréal
Barolet, R., Montréal
Beaudet, C., Montréal



Michaud, M., Bromont
 Michaud, G., Montréal
 Michaud-Girouard, A.,
 Trois-Rivières
 Millar, E., Montréal
 Munro, D., Montréal
 Muroff, F., Montréal
 Orawiec, R., Aylmer
 Ostro, E., Montréal
 Peltier, M., St. Lambert
 Poznak, G., Montréal
 Provost, A., Laval
 Prud'Homme, P.,
 Shawinigan-Sud
 Rapoport, R., Montréal
 Richer, A., Terrebonne
 Robert, P., St-Lambert
 Roy, S., Ste-Foy
 Rudy, G., Montréal
 Schwartz, S., Montréal
 Sofio, V., Candiac
 Solomon, D., Westmount
 Spira, A., Montréal
 Taylor, D., Westmount
 Tenenbaum, M., Montréal
 Terriault, F., Laval
 Thibodeau, P., Madeleine
 Tremblay, L., Ste-Thérèse
 Tremblay, R., Charlevoix
 Vouligny, V., Boucherville
 Wainberg, A., Montréal
 Werbitt, M., Montréal
 Wilkins, M., Dorval
 Youster, J., Montréal

Atlantic Provinces/ Provinces de l'Atlantique

Patrons/Bienfaiteurs (\$250 and over — et plus)

Baird, G., Halifax, N.S.
 Ball, R., Grand Falls, Nfld.
 Conrod, B., Sydney, N.S.
 Fitzpatrick, D., Saint John,
 N.B.
 Robertson, J., Summerside,
 P.E.I.
 Trites, L., Sackville, N.B.

Honour Members/ Membres d'honneur (\$150 — \$249)

Camp, W., Lower Sackville,
 N.S.
 Christie, J., Bedford, N.S.
 Conrod, C., Sydney, N.S.
 Cook, J., Truro, N.S.
 Craft, J., Saint John, N.B.
 Eisner, J., Halifax, N.S.
 Foshay, G., Halifax, N.S.
 Oler, C., Halifax, N.S.
 Pentz, R., Armdale, N.S.
 Shaffner, V., Halifax, N.S.
 Vogan, W., Halifax, N.S.
 Wenn, R., Charlottetown,
 P.E.I.

Members/Membres (\$50 — \$149)

Anonymous, P.E.I.
 Arnold, D., Woodstock, N.B.
 Bannerman, R., Halifax, N.S.
 Barrett, G., Charlottetown,
 P.E.I.
 Bonang, D., Halifax, N.S.
 Bourgeois, M., Halifax, N.S.
 Brayton, S., Halifax, N.S.
 Britt, D., Saint John, N.B.
 Broderick, P., Greenwood,
 N.S.
 Brogan, H., Dartmouth, N.S.
 Caverhill, P., Woodstock, N.B.
 Chiasson, G., Lamèque, N.B.
 Clark, D., Antigonish, N.S.
 Cochrane, L., Dartmouth, N.S.
 Conrad, G., Dartmouth, N.S.
 Corrigan, E., Charlottetown,
 P.E.I.
 Cruz, R., Halifax, N.S.
 Deveaux, G., Glace Bay, N.S.
 Dunphy, R., Antigonish, N.S.
 Elias, J., Dartmouth, N.S.
 Emanuele, A., Sydney, N.S.
 Ervin, A., Dartmouth, N.S.
 Flynn, J., St. John's, Nfld.
 Franklin, E., Rockingham,
 N.S.
 Gander Dental Surgery Ltd.,
 Gander, Nfld.
 Gauthier, J., Newcastle, N.B.
 Gerrow, J., Bedford, N.S.
 Goudie, W., Stephenville, Nfld.
 Graham, B., Halifax, N.S.

Greene, D., St. Stephen, N.B.
 Gushue, T., St. John's, Nfld.
 Hennessey, R., Parkdale,
 P.E.I.

Hoffman, A., Halifax, N.S.
 Hogan, P., Truro, N.S.
 Homenick, G., Sussex, N.B.
 Horsman, H., Riverview, N.B.
 Janes, R., Gander, Nfld.
 Johnston, B., Truro, N.S.
 Kampe, I., Wolfville, N.S.
 King, J., St. John's, Nfld.
 Landry, C., Tracadie, N.B.
 Layton, N., Truro, N.S.
 Leblanc, C., Moncton, N.B.
 Lobban, D., Chatham, N.B.
 MacDonald, B., Sydney, N.S.
 MacGillivray, R., Halifax, N.S.
 MacInnis, W., Halifax, N.S.
 MacLean, A., Summerside,
 P.E.I.
 MacPhee, C., Truro, N.S.
 Mader, M., Kentville, N.S.
 McKenna, K., Stellarton, N.S.
 McLean, R., Halifax, N.S.
 McMullin, R., Fredericton,
 N.B.
 McNally, S., Dieppe, N.B.
 Moyles, L., Truro, N.S.
 Peters, G., St. John's, Nfld.
 Peters, D., St. John's, Nfld.
 Petrie, D., Tracadie, N.B.
 Porter, P., Charlottetown,
 P.E.I.
 Porter, R., Antigonish, N.S.
 Raddall, T., Liverpool, N.S.
 Rector, W., Hampton, N.B.
 Richards, R., Hampton, N.B.
 Rix, R., Bible Hill, N.S.
 Robichaud, J., Campbellton,
 N.B.
 Roda, M., Halifax, N.S.
 Romcke, R., Charlottetown,
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Canadian Fund for Dental
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Interview with Dr. Rizk

The article in the November issue of the Journal titled "Capitation. A personal experience", clearly identifies the position being taken by the CDA, and the Journal, with respect to the controversial issue of capitation. While it may be the policy of the CDA to oppose capitation, I believe our national association and Journal have a responsibility to provide its membership with factual and comprehensive information, which is relevant to our national environment. With respect to capitation, I suggest the Journal is guilty of presenting a one-sided and misleading perspective. The interview with Dr. Rizk is an example of this situation.

The article based on the experiences of Dr. Rizk contains a number of issues which have been covered under the one blanket of capitation. My interpretation of the article is that Dr. Rizk, in his naivety as a young dentist, was unfortunate in his experiences with dentist/owners and practice management consultants, who demonstrated questionable professionalism and ethical standards. As Dr. Rizk himself repeatedly confessed, he was not fully conversant with the capitation plans and certainly not with the compensation arrangement between the dentist/owner and the capitation company.

The opinion expressed by Dr. Rizk that all capitation plans are the same, again reinforces his lack of knowledge of programs offering dental benefits on a capitation basis. For example, a significant portion of the article describes the influence which capitation has on the standard of laboratory services. Plans in Canada compensate dentists to the full amount of their laboratory expenses, in the same fashion as through traditional fee-for-service benefit plans. The lengthy discussion on how access to specialists is restricted, is again irrelevant in most, if not all, capitation programs being marketed in Canada. The program in which I am involved, has no restriction on the specialist to whom a patient may be referred. The specialist is again compensated in a fashion identical to the traditional fee-for-service plans.

A reaction to the discussion in the interview, on the financial impact on an office, of its involvement in capitation, would require more detail than is appropriate in this letter.

There are many dentists in the U.S.A. who provide high quality, ethical care to patients under capitation plans, while

receiving appropriate compensation. There are dentists in Canada who have been successfully involved in capitation for a number of years.

I challenge the Journal to fulfill its obligation, as a professional, scientific publication, to present the other side of opinion on capitation. Why not interview a dentist who has NOT experienced all you have heard wrong about capitation? Why not permit the companies marketing capitation plans, to present their responses to the concerns of the profession?

Dr. B.B. Ryding, BDS, DPD, MBA

*President: PACE Benefits Limited Partnership,
2695 N. Sheridan Way, Suite 100,
Mississauga, Ont.*

December Journal features — 'A pleasure to read'

It was a pleasure to read the December, 1988 Journal, (Vol. 54 No. 12) and note that the Canadian dentists are still doing a job for us and for Canada in the Third World countries. This subject has been dear to my heart for many years and particularly in the period 1969-1976 when I had the honour to be Chairman of the CDA Caribbean Dental Program. The details of what was accomplished have already been published (JCDA No. 1, 1981, page 12). The record was impressive.

It is marvelous to see that there are still places where the people may not know the dentist's name but can say "You are the Canadian dentist". I think I can speak for most of the volunteers when I say that to do such a service in a place where we are needed does something for us as a person as well as uplifting the image of Canada, which we all love despite our occasional "beefs". After all, there aren't many places we could live and be allowed to speak our piece!

The Journal is doing a good job letting us know what is going on in dentistry.

G.E. Burgman, DDS

Niagara Falls, Ont.

'Supervision Requirements for Dental Hygienists'

The following is a CDHA response to the statement "Supervision Requirements for Dental Hygienists" adopted by the Board of Governors, Canadian Dental Association, in August, 1988.

The Canadian Dental Hygienists' Asso-

ciation recognizes that the statement regarding supervision of dental hygienists, adopted by the Board of Governors of the Canadian Dental Association in August 1988, represents a (slight) improvement on the Canadian Dental Association's previous position on this issue. Both the manner of its derivation and its content, however, are disappointing to the Canadian Dental Hygienists' Association.

The statement was developed entirely by the Canadian Dental Association, without any official involvement or assistance from the Canadian Dental Hygienists' Association. It is truly regrettable that in the late 1980's the Canadian Dental Association would regard this as a suitable way to proceed in developing policy on the issue of supervision of dental hygienists. It negates the principle, frequently endorsed by the Canadian Dental Association and its members, that dentists and dental hygienists should work together in a collegial capacity as a team.

CDHA regards the statement itself as not recognizing adequately the education of dental hygienists (to standards determined by the Council on Education and Accreditation of the Canadian Dental Association), the status of dental hygienists as licensed health professionals, and the nature of the functions of the dental hygienists. For these reasons, the statement is not in harmony with policies, as exemplified in C.D.H.A.'s endorsement of the recommendations of the report of the Federal Government Working Group on the Practice of Dental Hygiene.

The Canadian Dental Hygienists' Association appreciates the opportunity of having this response officially recorded by the Canadian Dental Association.

Ellen Williams

President

(The Journal understands that while the CDHA did not have representation on the CDA ad hoc committee responsible for preparing the position paper, there was extensive informal communication with hygienists associated with the CDHA which contributed to some revision of the statement.)

The CDHA at no point, however, formally indicated argument with the statement.)

Malpractice in Dentistry

Les fautes professionnelles en médecine dentaire

These articles are for information only and are not intended to replace legal counsel, where necessary.

Ces articles constituent une source de renseignements et ne sont pas conçus pour remplacer les avis d'un homme de loi lorsqu'il y a lieu d'en consulter un.

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2. Boyce, J.S. "Risk management: an introduction for the dental practice." *Dental Hygiene*. Nov. 1987, v. 61, no. 11, pp. 504-7.
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4. "Dental malpractice suits rise sharply." *CDS Review* Dec. 1987, v. 80, no. 11, pp. 21-2.
5. Douglas, B.L. and Douglas, C.E. "A practical approach to informed consent in dental and oral surgery." *Illinois Dental Journal*. Nov.-Dec. 1987, v. 56, no. 7, pp. 618-9.
6. Harman, B.J. "Risk management essential for today's dentist." *General Dentistry*. Jul.-Aug. 1987, v. 35, no. 4, pp. 315-6.
7. Katz, B. and Sokol, D.J. "Legal implications and considerations in dental practice management." *Dental Clinics of North America*. Jan. 1988, v. 32, no. 1, pp. 123-30.
8. Logan, M.K. "Legal implications of infectious disease in the dental office." *JADA* Dec. 1987, v. 115, no. 6, pp. 850-4.
9. Macdonald, G. "A selected review of lawsuits brought against dentists. Their relevance to dental hygiene practice." *Dental Hygiene*. Aug. 1986, v. 60, no. 8, pp. 358-61.
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15. Pollack, B.R. "The dental laboratory in the 'chain of infection': a legal perspective." *Trends & Techniques in the Contemporary Dental Laboratory*. Jul.-Aug. 1986, v. 3, no. 6, pp. 3-6, 8.
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 27. Wisniewski, W. "Risk assessment and rate setting by malpractice insurance providers for dentists using sedation and anesthesia." *Anesthesia Progress*. Jul.-Aug. 1986, v. 33, no. 4, pp. 203-5.
 28. Zinman, E.J. "How to practice defensive dentistry." *Dental Management*. Nov. 1986, v. 26, no. 11, pp. 38-41.

One copy of the above package of articles is available for \$5.00 to all CDA members and for \$10.00 to non-members. (Ontario residents, please include 8% sales tax.)

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A TEXTBOOK OF OCCLUSION

Mohl, N.D., et al., eds

1988, Quintessence, Chicago
413 p., \$48.00 US

A Textbook of Occlusion offers a multidisciplinary approach to the discipline of occlusion that is based on scientific evidence, where possible, and on clinical experience, where not.

After an initial chapter introducing occlusion, the masticatory system and appropriate terminology, the book is divided into three parts: Anatomy and Physiology of the Masticatory System; Occlusal and Dysfunctional Problems of the Masticatory System; and Management of Occlusal and Dysfunctional Problems.

Part I, Anatomy and Physiology, is by far the best and most scientifically based section of the book. It is characterized by concise, cogent discussions and analyses of comparative masticatory anatomy, the dentitions and their development, the periodontium, the temporomandibular joint, the neuromuscular system and musculature, mandibular movement and functional activities. The section ends with a chapter on Concepts of Occlusion which provides an illuminating account of historical and contemporary concepts of occlusion.

Part II, Occlusal and Dysfunctional Problems, begins to see a shift from science to art and tends to be less clearly organized. Although substance is adequate, one wonders at the diagnostic approach recommended which advocates that the unwieldy Helkimo Dysfunction Index be used to screen patients and select those who need a "more detailed clinical exam". Diagnostic emphasis should be placed on an evaluation of the functional state as well as the dysfunctional and a rapid, thorough and efficient diagnostic protocol should be presented which includes an adequate occlusal history and stresses the recognition of signs as well as symptoms of occlusal disorders.

Part III, Management of Occlusal and Dysfunctional Problems, is quite well done although chapters on Behavioral Therapy, Physical Therapy and Pharmacological Therapy seem misplaced and

disjointed. The chapters on Interocclusal Appliance Therapy and Occlusal adjustment are thorough, but someone, sometime should say that the short-term objective of these occlusal therapies is simply to eliminate occlusal interferences. Chapter 22, Prosthodontic, Operative and Orthodontic Therapy, written by Professors G.A. Zarb and A.H. Fenton, is the high point of the book. Beyron's requirements for an optimal occlusion are described and their importance as the basis for occlusion-altering dental therapy is explained. The authors emphasize the importance of centric occlusion (ICP) as the functional reference position and, happily, advocate a long centric occlusion when maxillary complete dentures are fabricated.

It is truly remarkable that a book with four editors and twenty-five contributors, notwithstanding my earlier criticisms, could be so even and consistent both in style and in substance. Although **A Textbook of Occlusion** does have its faults and shortcomings, it is still one of the very best texts in the field and is a book I recommend without qualification to students and practitioners.

This book was reviewed by:
R.D. Oles, DDS, MS
College of Dentistry
University of Saskatchewan

A GUIDE TO DENTAL RADIOGRAPHY

Rita A. Mason

1988, John Wright and Sons Ltd.
226 pages. 300 B & W illustrations
US \$31.50

This is the third edition of the 27th book in a series of "Dental Practitioner Handbooks", originally directed towards dentists in general practice, but widely used in undergraduate dental training. It has grown over the eleven years from 136 to 226 pages, mostly because of added new material. The print size has been increased, making it easier to read.

Rita Mason is a tutor in dental radiography and the daughter of Sydney Blackman, founder President of the British Society of Dental and Maxillofacial Radiology. She has preserved many

aspects of her father's teaching, but has kept up with progress. Indeed, there is mention of the recent Chernobyl disaster, and some references are within the last year.

Radiation regulations and equipment reflect the British origin. While paralleling intraoral technique is fully described and promoted, the slow progress of this technique across the Atlantic is somewhat evident. This has not lessened the international appeal of the book. Bob Langlais, who wrote the Foreword, first came across the Spanish edition in Mexico.

The level is appropriate for the intended readership. The text can be readily assimilated, and is clear and concise. Material spans from radiation hazards and protection, through exposure factors and processing, to all aspects of intraoral and extraoral radiography relevant to dental practice. Techniques relating to foreign bodies, facial bones and salivary glands are covered well, and there is a 20 page chapter devoted to panoramic radiography.

The illustrations, both line diagrams and radiographs, are of good quality. The radiographs, generally, have a more desirable, lower contrast than those in the first edition.

I found a few proof goofs: p. 39 6g/h (6g/l), p. 46 rube (tube), p. 147 plan (plane), p. 148 chapters (fractures), p. 175 spiral (spinal). The radiograph on page 66 is inverted. With lowering acidity, pH rises, not falls (page 39). In image formation, magnification is considered but not geometric unsharpness. On page 54 and also the cover of the book, the beam in the bisecting angle technique is perpendicular to the film and not the bisector. Some would prefer to see thyroid shields added to lead aprons. I personally would not give elimination of irradiation to the hand as a valid reason for using filmholders, and wondered how well the wooden holders would withstand sterilization processes. These concerns are of a minor nature and do not significantly detract from the value of the book.

This book was reviewed by:
Colin Price, BDS, FDSRCS, MDS, FRCD(C)
Professor
Oral Medical and Surgical Sciences
Faculty of Dentistry
University of British Columbia

APPEARANCE AND AESTHETICS IN DENTURE PRACTICE

by D.J. Lamb

1987, Wright, IOP Publishing Ltd.
Bristol, England
110 pages, \$19.50 US

As the title suggests, this book is concerned with the appearance and esthetics of removable prosthodontics. This brief book attempts to summarize the various factors which should be observed to produce an esthetic prosthesis. The book is directed primarily at the undergraduate student. It attempts to round out the student's technical skills, by providing guidance as to the artistic and largely unscientific aspects of denture construction.

The early chapters of this book are devoted to age-related changes of the facial structures. The problems associated with aging and tooth loss are well reviewed. A brief summary of factors involved in alveolar resorption is provided. The work of researchers such as Tallgren is mentioned and selected references are listed by topic under "further reading" at the end of the book. A good review of what a denture can and cannot do, to correct age related changes in appearance, is provided.

One chapter is devoted to an assessment of the patient's existing dentures and an identification of the patient's dental needs. The author emphasizes that the dentist who does not listen to the patient's concerns with their existing and previous dental work, may well end up with a dissatisfied patient. Intraoral and extraoral examination techniques are reviewed. There is a good discussion on ideal facial proportions.

The majority of the book is devoted to the clinical management of complete denture appearance. The various technical stages of denture construction are followed, along with the influence of these stages on esthetics. The importance of correct vertical support is illustrated by photographs at different vertical dimensions. Optimal anterior support of the lips is illustrated in a similar manner. There is a good discussion of anterior tooth selection. Many of the popular myths related to tooth size and form are dispelled. The influence of not only different tooth arrangements but also different waxup techniques is illustrated. While the dis-

cussion of anterior tooth esthetics is excellent, the author devotes little time to the discussion of posterior tooth selection and the influence of factors such as cusp angle and occlusal plane curvature on denture esthetics.

The final two brief chapters of the book are concerned with the partial denture and the immediate denture. Factors influencing esthetics in the partial denture are looked at in a very cursory fashion. Examples are given of different types of partial dentures which can offer improved esthetics. These include two part partial dentures, precision partial dentures, rotational path partial dentures, and lingually retained partial dentures. Only one type of precision attachment is illustrated and one is left with the distinct impression that this chapter is only designed to whet the appetite of those who might be interested in ways of enhancing partial denture esthetics.

The final chapter on the immediate denture reiterates the importance of tooth selection and positioning. The author points out that current tooth positions may be far from ideal if periodontal disease and loss of vertical support have occurred. Patterns of bone loss following extraction are discussed as well as the importance of relining and ongoing denture followup.

This book offers a good review of basic items related to denture esthetics, especially as it relates to complete denture construction. This review would be most useful to the undergraduate student or the practitioner who does not do a great deal of removable prosthodontics.

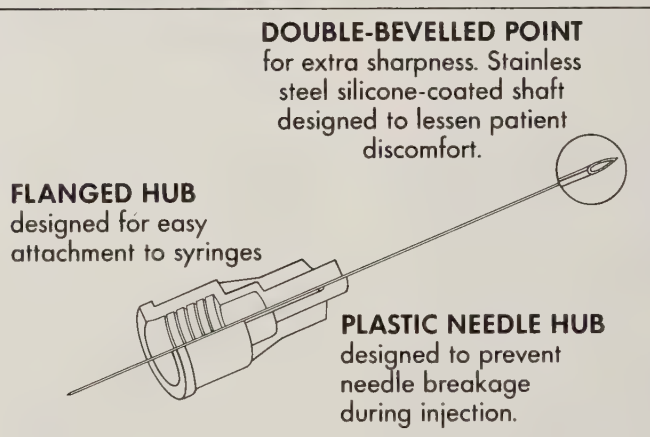
*This book was reviewed by
John F. Cox, DDS, MSc, Dip. Pros.
a Prosthodontist in private practice in
Ottawa.*

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Claudia Anderson, RDH

PART FOUR:

Staff Morale & Productivity

The scene: An eight by ten foot staff room decorated with brightly coloured coffee mugs, motivational posters, plants, a kitchen table and four chairs around which five people gather.

The Topic: An 8:00 AM team conference designed to discuss the day's schedule, patient treatment and needs, possible problems and solutions and personal agendas.

The Purpose: To enhance communication, to build staff morale, and to increase productivity through planning and cohesive action or teamwork.

Farewell to authoritative management, farewell to "them vs. us" and farewell to action motivated by fear and uncertainty. Welcome to participative team building, alignment, individual ownership, group purpose and shared profits. Welcome to the wonderful world of the evolved dental practice. . . If it was only that easy we'd all be doing it.

LET'S LOOK AT THE ISSUES:

ISSUE NO. 1: "We cannot legislate behaviour"

Morale and productivity are effected by personal motivation and personal reasons fostered through effective leadership within the practice "culture". In staffing practices, dentists need tools and skills to diagnose the patterns that create those reasons for people. Ideally, it would be more effective to understand how a person will "fit" into your practice before you hire them. Once hired, this information can be used in communicating your expectations, structuring roles and responsibilities, and creating an environment that allows the new employee some flexibility in order to remain motivated. It can become a very time consuming and expensive process to be continually creating and re-creating an awareness in staff members to why their attitudes, styles and behaviours are working away from the mission of the practice. It can also be very frustrating. Some programs available to dental practices that target behavior



change manifest the extremes of cultism that conflict with individual human rights. If what is happening in the U.S.A. today is any indication of our potential for problems, the ethical dilemmas inherent in this "scramble for productivity" have just begun. Individuals come to work in dental practices with certain expectations and experiences and they expect certain outcomes. If the outcome is not what they expected and in fact is better, an individual's self-image and internal motivation is enhanced. If the outcome is not in keeping with their expectations, they question their sense of who they are and react on a feeling level. Their internal motivation is turned towards dealing with these feelings, rather than dealing with the job at hand.

Expectations = Outcomes
Experience

ISSUE NO. 2: "We Can Manage Outcomes"

In the selection process, it is possible to learn what a potential employee expects based on their past experiences. This is achieved by asking them to profile their past behaviour in certain situations such

as work or under pressure. This provides the employer with information about how this new employee thinks and a better chance of facilitating positive outcomes that lead to a higher level of self-motivation.

Productivity through people is an outcome of ability factors and motivational factors. Ability factors are what a person can do and motivational factors are what a person is willing to do.

The Productivity Formula

1. Ability Factors

- A. Aptitude/Style
- B. Experience
- C. Training/Education

2. Motivational Factors

- A. Leadership
- B. Organizational Climate
- C. Needs structure & Values of the individual
- D. Rewards and Incentive

ISSUE NO. 3: "Productivity is an outcome of purpose"

When there is a drop in productivity, practices tend to look at efficiency (doing things right) rather than effectiveness (doing the right things) to solve the problem. Often it requires an analysis of the Performance Formula. If the "wrong" person has been hired for a job, no amount of structure, rules and responsibilities, will improve their performance. It is necessary to rethink the purpose of the particular role that a person plays and to determine if they are the best person for the job. If they have the ability factors then the problem may be in the way they are being managed. Since dentists have been trained to think in linear parameters, this method of strategic thinking is new to them. The challenge of remaining profitable in an ever changing marketplace is the challenge of planning for productivity in new ways. Δ

Claudia Anderson is President of Anderson Programs Inc., Vancouver, B.C. She graduated from the University of Manitoba in 1965 with an R.D.H. and is presently a masters candidate in educational psychology. Claudia lectures part-time at the University of B.C., Faculty of Dentistry. Anderson Programs Inc. is a consulting company that works with dentists in the area of practice management.



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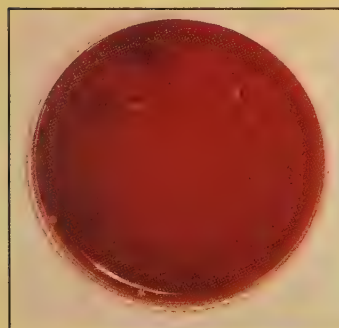
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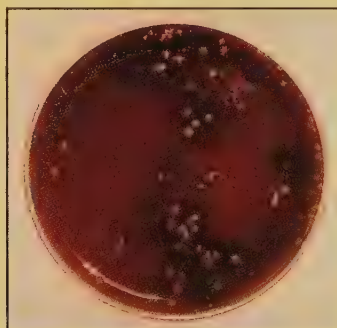
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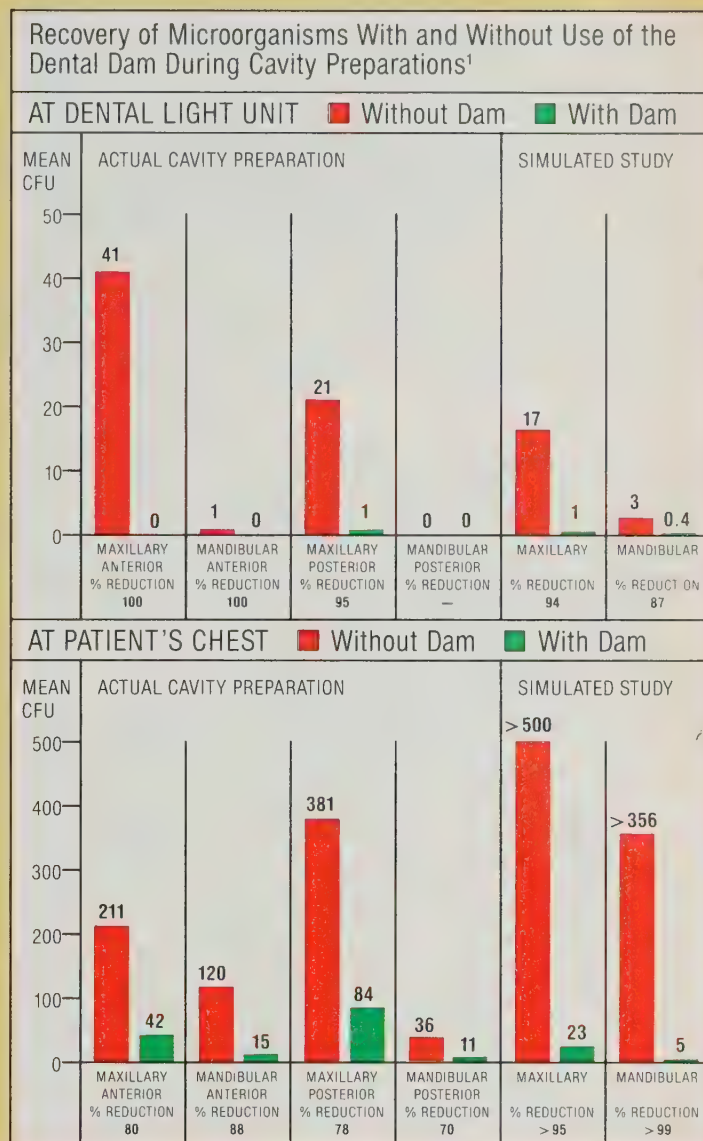


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¹ Cochran, Michael A., D.D.S., M.S.D.; Miller, Chris H., B.A., M.S., PhD; Sheldrake, Margie A., B.A.; "The Efficacy of the Dental Dam as a Barrier to the Spread of Microorganisms During Dental Treatment" In publication.

² Micik, R.E. Studies on Dental Aerobiology I: "Bacterial Aerosols Generated during Dental Procedures" *Jl. Dental Res.*, 48:49-55, Feb. 1969.

³ Larato D.C. et al: Effect of a dental air turbine on the bacterial counts in air. *Jl. Pros. Dent.*, 16:758-765, 1966.

⁴ Goldstein J.; Morse, K.; Gullen, W.; "Epidemiology of Hepatitis B Among Endodontists," *Journal of Endodontics*, 4:336, 1978.

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DENTAL ETHICS

PART III

Challenge and Crisis

*By Professor Arthur Schafer,
Director, Centre for Professional and Applied Ethics,
University of Manitoba; Head, Section of Bio-medical Ethics,
Faculty of Medicine, University of Manitoba.*

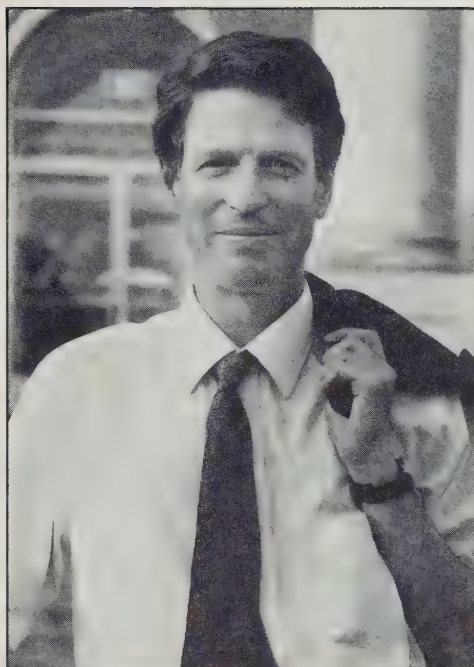
Editor's Note: Times are changing! And so are some of the "rules of the game" in dentistry!

In the past two issues Professor Arthur Schafer has addressed the topics "What Ethics is Not" and "Dental Ethics: Getting the Balance Right". In this third and final article he presents the readers with "Challenge and Crisis".

The opinions in the three articles are those of Professor Schafer and not necessarily in agreement with opinions, policies and guidelines of the Canadian Dental Association, any of the Corporate Bodies or Licensing Authorities.

The Journal invites readers' interest and input. Please send your comments to the Editor promptly. As space permits the comments will appear in future Journal issues.

All letters will be forwarded to the Council on Ethics for deliberation and consideration.



Professor Arthur Schafer

The conflict between self-interest and professional ethics is nowhere more acutely felt than in the dilemma faced by dentists as to whether they should treat patients who have AIDS, are known to be sero-positive to the HIV virus, or are suspected to be at risk for AIDS because they are believed to be IV drug users or homosexuals.

We know that a dentist who treats a patient infected with the AIDS virus —

even if the dentist carefully takes all recommended precautions — is at some risk of acquiring the virus. Although the risk is very small, the consequences of acquiring the virus are frequently fatal.

It is understandable, then, that many dentists are reluctant to treat any patient known to them as HIV positive, or anyone known to live an at-risk lifestyle. Some dentists are more than reluctant; they outrightly refuse. While one may understand and sympathize with the fear of many dentists confronted with the spectre of AIDS, it is necessary to keep in

mind that part of the ethical "baggage" one takes on board when becoming a health professional is the obligation to treat patients who are in need of the kind of health care that only dentists can deliver.

It needs to be reiterated that although the stakes, if one acquires AIDS, are very high indeed, the risk is very small. Comparatively speaking, a dentist who smokes is many thousand times more likely to die of this habit than the dentist is likely to die of acquiring AIDS from HIV positive patients. Driving to work in the morning and driving home at night pose far greater risks of mortality and morbidity than treating patients who have AIDS or who are sero-positive for AIDS.

What limits are there, if any, to a health professional's moral obligation to treat hazardous patients? Where does duty end and supererogation begin? Does each dentist have an ethical obligation to treat hazardous patients, or should the public be satisfied that the profession guarantees that *some* dentists are available to treat risky patients?

There will be considerable disagreement among both dentists and the general public about how these difficult questions ought to be answered. But, consider the insult to a patient refused treatment because it is suspected or known that he/she is homosexual or haemophiliac.

The issue of the dentist's obligation to treat risky patients raises dramatically the nature of the dentist-patient relationship. Do the members of the Canadian dental profession wish to be seen by the

community as health professionals whose first commitment is to public health, or as independent contractors, completely free to pick and choose who is to be treated and who is not.

If we set aside for the moment the needs of people with AIDS, it is also important to focus on the *public health* dimension of this issue. Each dentist ought to ask himself/herself, "What will happen to these patients if I refuse to treat them?" The answer is that these patients would be further stigmatized and isolated. From the perspective of public health, stigmatizing people who are either HIV positive or at risk of becoming so is likely to drive them even farther underground. It may encourage them to conceal their status rather than to come forward to be tested. People who avoid being tested also avoid being counselled. This, in turn, makes it less likely that they can be assisted to live in such a way that they do not impose unnecessary risks upon others.

From the public health point of view, any action by health professionals which stigmatizes and isolates people who are HIV positive is almost certain to be counter-productive. That is, it is almost certain to promote the spread of AIDS rather than its containment.

There is a further problem: equity and fairness. Those dentists who refuse to treat hazardous patients will either pre-

vent such patients from receiving needed treatment, or force other dentists, some colleague, to accept large numbers of such patients in order to provide the needed treatment. What has already happened in many large American cities (where there is a significant minority of patients who are HIV positive) is that many dentists refuse to treat hazardous patients, and the few dentists who are willing to do so find that their entire professional lives are occupied with treating patients who have AIDS or who are HIV positive. It seems unfair that the burden of care should fall so disproportionately upon a few dentists.

The solution to this problem may be that the profession should acknowledge that each and every dentist has a professional obligation to treat patients thought to pose risks. Since the risk is very, very low (the incidence of AIDS amongst surgeons and dentists is still no higher than in the general population) this obligation does not seem especially onerous. It would be onerous, however, if the entire burden of care fell upon the shoulders of only a few of the most ethically conscientious members of the profession. It is important that the dental profession consider the implications for itself and for the public's image of the profession if the profession does not make a strong commitment on this issue.

One of the great dangers we face from the AIDS epidemic goes beyond danger to our health and encompasses a very real danger to the moral fabric of society. We may come to view every stranger as a potentially hostile enemy — as the potential carrier of a dread disease. If that should occur, it is easy to imagine the fate of an accident victim (who could be any one of us). If the victim lying upon the street, bleeding, is regarded as a potential source of fatal contamination, the likelihood is that most people will walk by without giving assistance.

If such a "plague mentality" spreads, we could become the kind of society in which parents hold their children back from school because it is suspected that there may be a child with AIDS in the classroom. All of this, despite the fact that the best epidemiological studies indicate that AIDS cannot be transmitted casually. Once we begin the march down this slippery slope, the possible consequences for society — and the effect on our moral code — is fearful to contemplate.

Teachers, police officers, and health professionals are in the front line of establishing an adequate moral response to AIDS, one which will both protect public health effectively, and at the same time, protect and nurture our common humanity. Δ

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ENDODONTIC FAILURES AND RETREATMENT

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Assistant Professor
Director of the Division of Endodontics
Faculty of Dentistry
McGill University
Montréal

In endodontics today, there seems to have evolved a subspecialty called "retreatodontics". Patients requiring this treatment have increased greatly in the last number of years, as a result of the increase in endodontic failures. How we diagnose and attempt to retreat these teeth will be the topic of this clinical article.

Definition of Success and Failure

Very few procedures in dentistry today can be termed successes or failures. A clear definition of what constitutes a "failure" following endodontic treatment does not exist among endodontists.

A. Clinical Criteria

The term "adequate" clinical function without symptoms of discomfort or infection, is usually the criteria used to measure the degree of clinical success or failure. Failures may also be based solely upon the persistence or development of symptoms such as pain, swelling, or fistulous tract, even with negative radiograph findings.

B. Radiographic Criteria

In the literature, considerable variations exist in the incidence of successes and

failures reported by various investigators. Several groups of investigators have found that agreement among themselves, on the presence or absence of periapical rarefactions, occurs in less than 50 per cent of the cases studied.

Generally the radiographic criteria for failures are: 1) The development of radiographic periapical areas of rarefaction after endodontic therapy, in cases where none had been present prior to the root canal treatment, and 2) the persistence or increase in the size of rarefaction after the completion of endodontic treatment (six months as a guide).

Other investigators claim that success is only attained when the periapical rarefaction has completely disappeared with the possible exception of a slight thickening around excess filling material.

Teeth with a lucency smaller than that prior to treatment fall in the grey area of either "dubious" or "healing".

Success can therefore be defined as the end result of endodontic therapy; i.e. the tooth is functional, asymptomatic clinically, and without radiographic pathosis.

How long should we wait to render our verdict on the RCT? Obviously, each case is different, but in general, if a tooth fails, it will do so within two years of treatment.

Before we can decide if a tooth is retreatable, and by what means, we must determine the probable cause of the failure.

Failures of Omission

Failures may occur when the original endodontics did not thoroughly clean

and completely obturate the root canal spaces. The endodontic therapy may be termed "underdone".

By diagnosing and treating the wrong tooth, the dentist would not be removing the degenerating or degenerated pulpal remnants, the cause of the problem, hence the patient's symptoms will persist. In these cases proper diagnosis followed by non-surgical endodontics will lead to a successful result.

In the same vein, a failure will result if all the pulpal debris is not removed from all of the canals in the tooth. i.e. one or more canals are undetected and untreated. This type of failure can easily be converted to success by cleaning the remaining noxious or irritating material from the untreated canals.

These types of failures are usually easy to diagnose radiographically. Teeth with periapical radiolucencies and underfilled canals can usually benefit from conservative endodontic retreatment.

Failures of Commission

It is these cases that have the poorest prognosis for successful retreatment. If during the initial RCT, an obstruction, perforation, or other procedural error occurs, then retreatment could be less than ideal.

If it is possible to remove the obstruction or block the perforation and renegotiate the canals to the original apices, then the tooth can be saved nonsurgically. Failing that, surgical endodontics or exodontia will have to be performed.

The following are failures of commis-

sion: separated instruments, blocked canals, ledged canals, perforations, zipped and transported apices, teeth with irremovable posts, teeth with non-soluble filling materials, teeth with anatomic configurations that make instrumentation impossible, and canals that have been grossly overfilled.

Removal of Gutta Percha

Let's assume that the tooth to be retreated has been restored with either a permanent restoration or a crown. It is then necessary to treat the tooth as if no endodontic therapy had been done. A proper access cavity is prepared exposing the base. This base should then be removed judiciously with a high speed surgical length round bur (size no. 4 or no. 6) until the pink gutta percha is seen. The entire roof of the chamber should by now have been removed giving direct access to all of the canals.

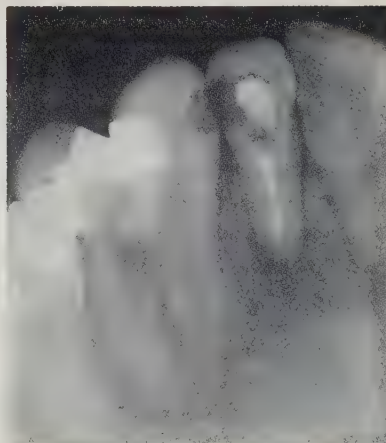
Gates Glidden drills, no. 3 or no. 4, are employed to soften and remove the coronal portion of gutta percha, from the chamber and the top of the canals. By rotating at a high speed, these drills generate much frictional heat against the gutta percha. This heat softens the rubber and in addition, the shape of the rotating flutes, removes the gutta percha from the canals. Very little pressure is exerted on the mass of gutta percha in the canals, as this could lead to a perforation of the walls.

At this point one should attempt with a medium to large nerve broach to enter the canal, and with a slight rotating motion, engage and remove the remaining gutta percha cone. If the cone is not well condensed, it will come out quite easily.

If the cone does not move, the next stage is to attempt to remove some more gutta percha with a pointed heat carrier. Once again loose gutta percha will adhere to the heated instrument and can be removed.

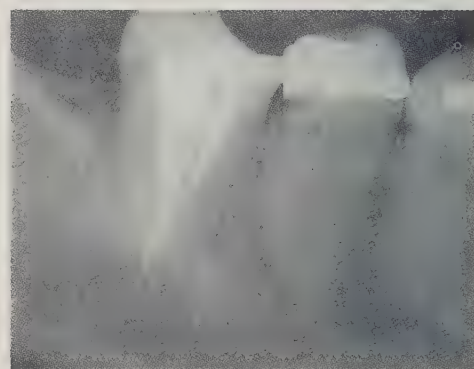
The gutta percha remaining in the canal can now be softened with a solvent (chloroform or xylol).

As both of the solvents mentioned are very tissue toxic, care must be taken not to force any solvent through the apex. The canals are flooded with xylol using a disposable syringe. A broach or Hedstrom file is worked into the softening mass of gutta percha using a 90° clockwise rotation, followed by a withdrawal stroke. This movement is repeated as the file moves up the canal. The file must always be bent slightly at the tip so that false canals are not created. As soon as all of the gutta percha is removed to the proper length, the canal should be flushed



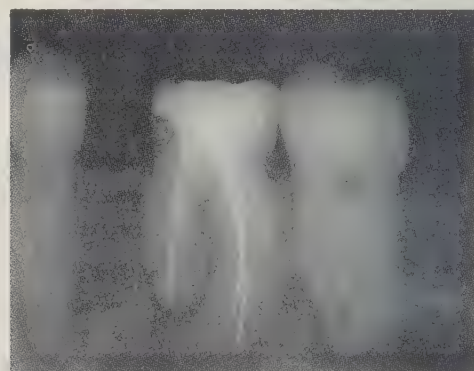
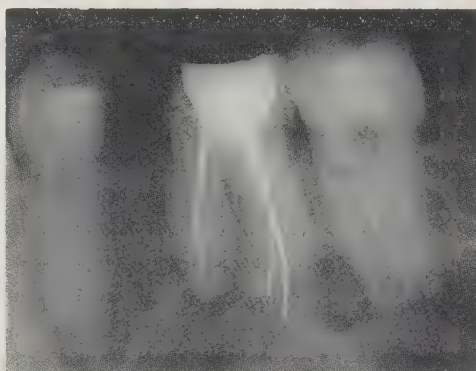
Case 1. Failure of omission:

- A) Under-cleaned and under-filled root canal
- B) Recleaned & obturated with gutta percha and sealer



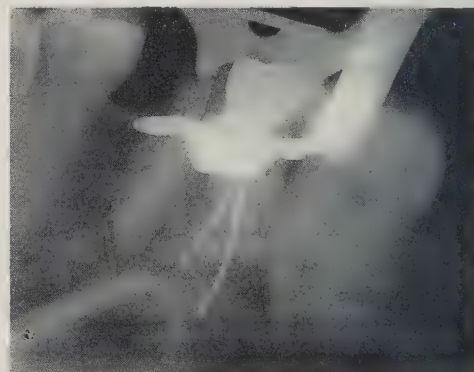
Case 2. Failure of omission:

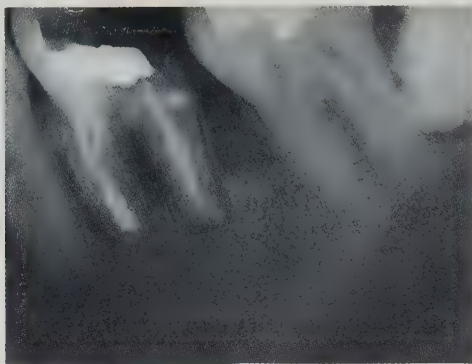
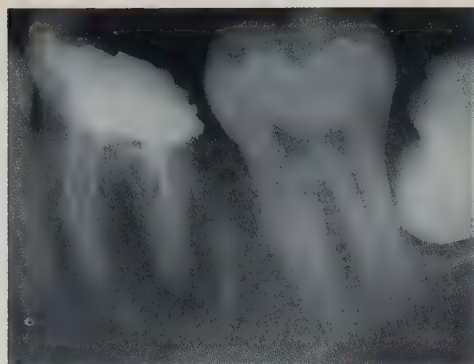
- A) Silver cone over-extended but the canal was not sealed
- B) Re-Obturated with gutta percha and sealer



Case 3. Failure of omission:

- A) Silver cones with a periapical radiolucency on the mesio-buccal root
- B) Obturated with gutta percha & sealer
- C) Off-angle radiograph shows the fourth canal which was originally not treated





Case 4. Failure of omission and commission

- A) Two canals were under-filled and two were blocked short
- B) Four canals were retreated and in addition the mesial canals were treated surgically with amalgam retrograde fillings



Case 5. Failure of under-filling of cement

- A) Root canal with a cement and a cast post
- B) Surgical retreatment with an amalgam retrograde filling

with copious amounts of sodium hypochlorite to dilute the xylol. The canal can now be cleaned and shaped to remove all of the necrotic debris.

Removal of silver cones

Again we assume that the cones were covered with a base and a final restoration.

One should exaggerate the size of the access opening because should the high speed round bur contact the soft silver cone, thereby shortening it, its removal would be much more difficult.

After the base is exposed, very careful removal of the base is undertaken with taper fissure burs. The base that is removed first, should be in areas where one would not expect to encounter silver cones, i.e. around the periphery and in the furcation area. When a silver cone is exposed, care must be taken not to touch this cone with the bur. Endodontic explorers and spoon excavators should be employed to pick away at the cement adjacent to the silver cones. All of the cement must be removed.

The chamber should now be flooded with xylol (or chloroform) to dissolve any gutta percha and sealer present. If the silver cones are extending out of the canal and into the chamber, they can be

removed by a sharp spoon excavator or silver cone pliers. Generally, the cones are rocked back and forth with a spoon excavator to pump xylol alongside the cones thereby loosening up the sealer bond, prior to their removal. The canals are then flushed copiously to dilute the xylol.

If the cones do not project into the pulp chamber, then a different technique of removal is employed. Flood the chamber with xylol as was previously described. Attempt to work a no. 10 K-file alongside the silver cone as deeply as possible without forming any false canals. Serially clean alongside the silver cone up to a size no. 25 or no. 30 K-file. Now use a Hedstrom file no. 25 or no. 30 in the same manner as one uses a spoon excavator, and try to have the flutes of the files bite into and withdraw the cone. It is also useful to place two Hedstrom files alongside the silver cone, rotating the two Hedstroms about each other engaging and removing the cone. If this technique does not unseat the silver cones, then judicious dentine removal around the cone to form a depression around the silver cone, must be attempted. When the cone is exposed enough, then a sharp spoon excavator or silver cone pliers must be used to extract the cones. In

some rare instances, ultrasonic or sonic files can be activated alongside the cone to vibrate it loose.

Removal of Cements

Cements fall into two categories: soluble and insoluble. Soluble cements are usually paste-like materials that are soft or can be softened using xylol or chloroform. These cements are treated like gutta percha.

Insoluble cements often have the consistency of concrete. The only way to remove these cements is by physical drilling with high speed burs and by picking at them with endodontic explorers and spoon excavators. Luckily these cements rarely go very deeply into the canals.

Once the obturating material is removed then careful manipulation of files and reamers is necessary to remove the remnants of obturating material and sealer.

Surgical Endodontics

In cases where it is impossible to renegotiate the canals in their entirety, or where it is impossible to hermetically seal all of the orifices of the root canal system, surgical endodontics is the treatment of choice. Some examples are: teeth with blocked canals, perforated roots, teeth with posts, and previously retreated teeth.

It is necessary when doing a surgical retreatment, to design the flap in order to expose the portion of the tooth that requires the surgical intervention. This is important when one is repairing a post perforation or horizontal root fracture, as well as the apical retrograde amalgam. The surgical technique is beyond the scope of this article, but one must remember that there is a reason for the root canal failure and this must be found and corrected, in order for the surgical technique to work.

Special Cases

A. Resorptions

Internal resorption ceases with the removal of vital pulp tissue, however the defect remaining may be difficult to obturate completely. This anatomic difficulty, when combined with either a lateral perforation of unfilled accessory canal, can result in a failure of the endodontic treatment. Surgical intervention, if there is to be any intervention at all, is the retreatment vehicle of choice.

External resorption, if opposite a lateral canal, may be halted through recleaning and filling of the root canal space. If this is not possible, surgical treatment must be undertaken.

B. Fractures

Vertical root canal fractures are not reparable. If the fracture is horizontal or oblique, the apical fractured segment must be removed and an apical seal (amalgam or glass ionomer) placed over the stump of the canal.

C. Perio-Endo

A true combined perio-endo lesion requires endodontic treatment if there is a failure of omission. Failures of commission should be repaired at the same time as the periodontal surgery is performed, if possible.

D. Wide Open Apices

These cases are best treated with an apexification or apexogenesis procedure. Remove the canal contents and seal in calcium hydroxide. Periodic radiographic follow-up will reveal the status of the root formation or closure. If this cannot be undertaken, then a retrograde amalgam surgical procedure can be attempted. The apical portion of the dentine is very thin and fragile, and as a result, much root length will be lost in a tooth that is short to begin with. This additional shortening of the root may pose a problem.

E. Emergency Retreatment

When an emergency arises in a tooth that has already undergone endodontic therapy, a few choices must be made.

Firstly, we must ask, is the tooth salvagable? If it is, then one must decide if it is an error of omission or commission.

Errors of omission should ideally be treated by drainage through the tooth. If the filling material can easily be removed *without* the use of xylol, this is the treatment of choice and the tooth is then treated as any other emergency case. If, however, much work is necessary to remove the filling material, then the treatment of choice is antibiotic therapy and surgical drainage, if possible. Xylol is an irritant, and if it is pushed through the infected apex it will cause an increased amount of pain and swelling, hence its use is contraindicated. When time permits, the use of xylol is indicated in the retreatment of a comfortable patient. An error of commission must be treated by antibiotic therapy and if possible, surgical drainage.

In conclusion, one must be aware that retreatment involves work on pulpless, infected, or symptomatic teeth, and as a result, care must be exercised to minimize the between visit flare-ups, and complications. Patients must be warned of the increased complexity and dubious prognosis of some retreatment cases prior to starting the retreatododontics. Δ

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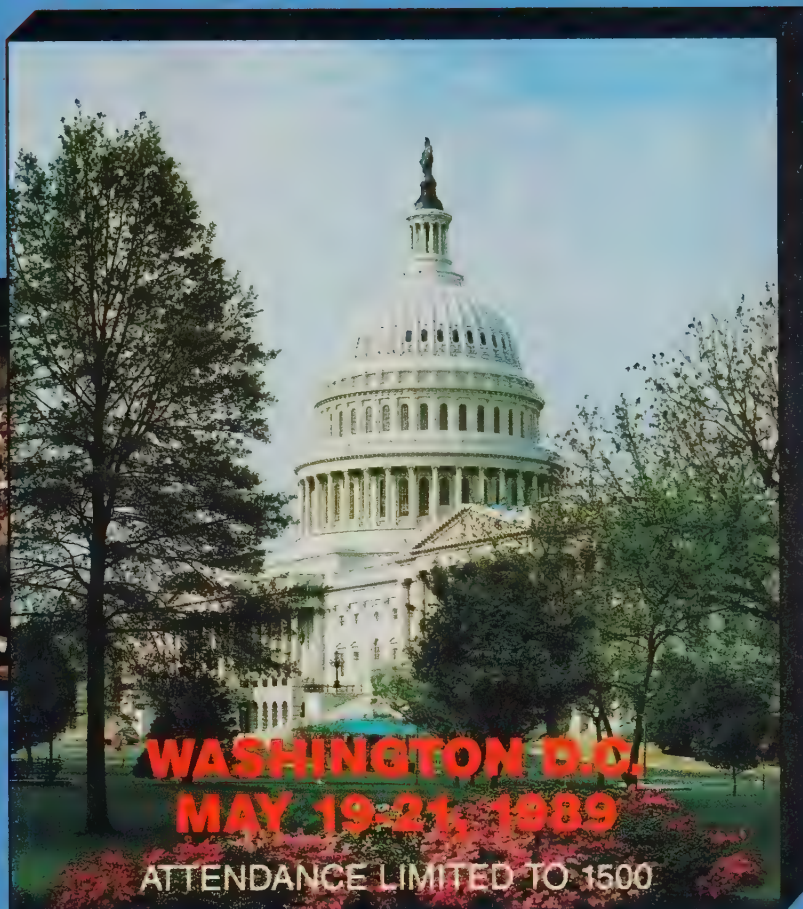
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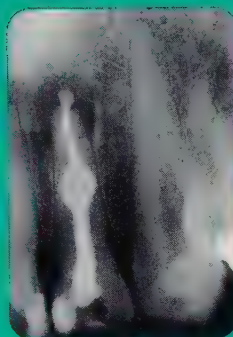
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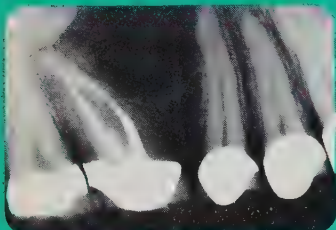
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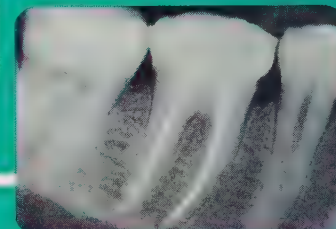
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COMMUNICATION and the difficult endodontic diagnosis patient

*William J. Kost, DDS, MS, FRCD(C)
Saskatoon, Sask.*

The dentist is armed with a basic science background and understanding of the pathological changes which occur within the endodontic-periodontal complex, as the pulp degenerates through the seven stages of pathosis: 1. normal pulp; 2. reversible pulpitis; 3. irreversible pulpitis; 4. irreversible pulpitis with periapical extension; 5. acute apical periodontitis; 6. chronic apical periodontitis, and 7. chronic suppurative apical periodontitis. With experience he is no doubt able to form an endodontic diagnosis and formulate a treatment plan based on the results of simply his percussion and cold thermal tests. To further delineate and complement that diagnosis, the prudent practitioner will apply adjunctive tests such as luxation pressure, mobility, periodontal probing, electric pulp tests, heat, crushing test as patient bites on a cotton roll, and mesial and distal radiographic views.

The difficult diagnostic patient, however, presents a real challenge to the dental practitioner. That difficult diagnostic patient may have previously been to several other dental practitioners, the family physician, the ear, nose and throat specialist, and the maxillofacial pain dysfunction clinic, with no adequate diagnosis of his problem.

The patient may present as a frustrated, worn out, desperate individual who is finally willing to undergo any treatment necessary or possible to alleviate his discomfort.

The most common ultimate dental diagnosis in the difficult diagnosis patient is one of irreversible pulpitis. The patient may complain of a spontaneous ache that occurs with no trigger whatsoever. He may have an ache which is sometimes triggered by hot or cold, but not all the

time. He may have an ache which is triggered by biting in only a certain position. The pain may disappear for weeks or months and then come back with a vengeance.

Must communicate well

In performing diagnostic procedures for any patient, and especially the difficult diagnostic patient, it is important for the dentist to communicate well. He must explain exactly what he expects to gain from his tests, exactly how the patient should feel the test as applied and how the patient should react and inform the dentist of his feelings. Too many times, the dental patient presents in the office expecting a painful procedure. It can be very counterproductive and confusing when a patient is expecting pain to result from the administration of pulpal and periodontal testing procedures, and therefore offers no reaction to the tests, because no pain is actually felt.

In the difficult diagnostic patient as with any endodontic diagnostic patient, the practitioner should strive to formulate a comparison among all the teeth in the neighborhood of the pain. This comparison does not have to be stark black and white. The perceptive practitioner will be able to sort out the shades of grey. For example, it must be explained to the patient that as all of the teeth in a quadrant are gently percussed with a mirror handle, the first few teeth to be tapped will most likely be healthier asymptomatic teeth and the purpose of tapping those teeth is to establish a baseline for comparison. The patient must be led through the use of many descriptive words in order to help to identify the tooth which may seem "weaker, more vulnerable, looser, mushy sounding, more mobile, tender, sore"

and other similar synonymous words. Many times, the dentist might strike a tooth which simply feels slightly weak and the patient would not respond if not previously coached so the dentist would miss the identification of that tooth.

Likewise the patient should be informed that as the cold test or the hot test is applied to several teeth, the practitioner simply requires feedback as to when the patient feels "the first threshold level of slight thermal sensation" or "temperature awareness" or "feeling" on the tooth. Also, the practitioner should not lead the patient to one specific feeling such as "cold", since the nerve network within the tooth cannot distinguish between cold and hot. When an ice pellet is placed on the tooth, the patient having been asked to report cold, may not respond because he actually perceives hot in his own mind. An important thing to review with thermal testing, as soon as the stimulus is removed, is to ask the patient if the sensation still lingers after the removal of the stimulus. The dentist must keep asking the patient if the reaction feels like an "echo or a memory or a vague awareness not painful but reminiscent of the application of cold" and the dentist must keep in touch with that patient every few seconds to find out if, and how long, the linger continues. A tooth which reacts sharply in intensity with no lingering sensation may be normal but a tooth which reacts sharply in intensity and has a sensation which lingers is most likely suffering from irreversible pulpitis. With hot application whereby the heat stimulus must be held on the tooth for a period of time and there is a slow onset of feeling followed by a lingering memory in the tooth, this is strongly indicative of irreversible pulpitis.

Thermal tests may not result in tooth pain, but may cause a delayed referred pain. Ask the patient about it.

The electric pulp tester serves to give relative vitality readings of all of the teeth in the neighborhood and cannot necessarily be relied upon as a definitive test. However, if a diagnosis cannot be achieved on "day one", reapplication of electric pulp test at a later date may show uniformity of reaction of neighboring vital teeth but a difference in the reaction of the affected tooth.

Cracked tooth syndrome

A simple cotton roll may be used to test for cracked tooth syndrome. As a patient bites on several teeth in the neighborhood and gradually increases applied pressure and goes through lateral excursive masticatory movements, one may establish a baseline for comparison of what normal teeth feel like. As one comes across a tooth which may be a little sensitive to lateral excursions or apically directed crushing pressure, a further application of the cotton roll may be used. The patient slowly and gradually increases the clenching pressure straight down upon the cotton roll. He holds the cotton roll tightly between his teeth for five seconds. Ask him to release the pressure quickly and ask him to be aware of whether there is sharp flash of pain as the cracked plates of enamel slap back together. Access the tooth and apply iodine or other dyestuff, or transilluminate to identify and confirm the crack.

Mesial and distal radiographic views are mandatory in order to allow use of the buccal object rule to determine location and number of canals as well as the difference between internal versus external resorption and the location of retentive pins within the tooth. If pins extend into the periodontal ligament space they might cause percussion sensitivity and therefore cause confusion as to the pulpal or periodontal etiology of the pain.

Access under bridge work

Teeth located under bridge work are difficult to access with cold and hot tests but it is worth a try. Repeated application of heat or cold to gold crowns may be necessary. Special fine tips are available to add to the end of an electric pulp tester. If the gingival sulcus is retracted with a plastic instrument the fine tip may be used to contact the dentin or cementum below the bridge or crown margin. Sometimes, a test cavity preparation may be necessary to determine vitality of a tooth under a bridge. It sounds drastic, but a tiny round

hole can be easily repaired with a small patch of amalgam.

If all other individually applied tests fail and the patient has a chief complaint of sensitivity to drinking hot or cold liquids, he may then rinse his mouth with a hot or cold liquid to determine whether the pain is generated. The dentist may utilize selective regional anaesthesia by depositing a very minimal amount of anesthetic drug over the apices of maxillary teeth. He may utilize intra ligamentary injections to contain local anaesthetic solution within range of one or two teeth in order to establish the source of thermally generated pain in the mandible. After

anaesthetic administration, the patient rinses his mouth with hot or cold water and see if the pain returns.

No matter how long the history of the pain or affliction which the patient has suffered, the dentist must stick to a cardinal rule of diagnosis. If none of his test applications causes any change in subjective feeling or pain feedback, then he should not attempt to treat any tooth, no matter how much he pities or empathizes with the patient. In the absence of subjective symptomatic change, the odds are great that the dentist will treat the wrong tooth. Δ



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An evaluation of CLINICAL ENDOSONICS

Bruce L. Chenail, DMD, MS
Saskatoon, Sask.

ABSTRACT

Reports of the success rate in endodontics range from 70 to 97 per cent. Success rates for ultrasonic endodontics have not been documented. In this survey, endosonically treated cases were reviewed after eight to 33 months and assessed clinically and radiographically. This revealed that endosonic treatment was successful in 93 per cent of the cases.

Endosonics has been commercially available for four years. Its uses and effectiveness have been described by several authors.¹⁻⁶ Most investigations have been performed *in vitro* and only two articles describe results of endosonic instrumentation on clinical cases.^{5,6}

Reported success rates for conventional endodontics range from 70 to 97 per cent with a mean of 87 per cent.⁷⁻⁹ With the exception of four cases presented by Stamos *et al.*,⁵⁻⁶ no one has evaluated the long-term success of clinical endosonics. The purpose of this paper is to present preliminary (8-33 months) findings as to the success of cases treated endosonically.

Methods

Forty patients treated by the author at the College of Dentistry, University of Saskatchewan since 1984 agreed to undergo a radiographic and clinical evaluation of treatment. All cases had been treated from eight to 33 months previously

using the following technique.

Access openings were completed and pulps were removed, where possible, with broaches. Canals were pre-flared with reamers as outlined by Gerstein.¹⁰ Working lengths were determined electronically and confirmed radiographically. Size 10 and 15 K-files were used to circumferentially file canals until a size 15 endosonic file fit passively to working length. A Cavi-endo machine (Dentsply) and size 15, 20 and 25 endosonic files were used sequentially and with constant irrigation (2.5 per cent NaOC1) until a minimum size 35 K-file would fit to working length.

Instrumentation involved active circumferential filing. Endosonic files were placed to working length passively and then withdrawn forcefully in overlapping increments around the periphery of canals. The Cavi-endo power setting was at maximum.

A sequential step-back was completed with K-files in 0.5 mm increments to the middle one-third and the coronal portion of canals were flared with diamond endosonic files. Apical dentine matrixes (stops) were reconfirmed and then each canal was irrigated continuously and smoothed endosonically for one minute. Canals were dried and obturated with lateral condensation immediately or at a subsequent appointment.

Forty cases were evaluated clinically and radiographically. A total of 84 canals were treated. Follow-up periods ranged

from eight to 33 months with an average of 20 months.

Radiographs were evaluated according to criteria used by Pekruhn.⁹ Cases were considered to be failures if: (a) a pre-existing lesion had not changed size; (b) a lesion had increased in size or had developed where none had existed prior to treatment; (c) a pre-existing lesion had decreased in size but was still present; and (d) the tooth was symptomatic. A single evaluator interpreted radiographs since, as Goldman *et al.*¹¹ had found, agreement between two or more examiners was unreliable.

Results

All patients examined were asymptomatic. Radiographic signs of success were observed in 37 cases. **Figures 1 and 2** show radiographs immediately after obturation and at various times postoperatively and represent healing. Three cases showed signs of failure. **Figure 3** is an example of a case in which a periapical radiolucency did not resolve. The patient was a 65-year-old diabetic who was treated in two appointments.

Discussion

Traditional success rates for endodontics range from 70 to 97 per cent.⁹ The present survey shows a success for endosonics of 93 per cent, which is comparable to past reports. Reasons for the 7 per cent failure could be other than the instrumentation

technique. Working length and/or density of obturation may have influenced healing (Fig. 3).

The technique used to prepare canals was a combination of mechanical, chemical and ultrasonic methods. Forceful, circumferential filing with the endosonic unit simulated hand filing. The ultrasonic vibrations and constant irrigation were unique to this technique.

Perhaps the biggest advantage of endosonics is the constant, effective irrigation. Syringe irrigation is ineffective in canals smaller than size 30.^{12,13} Several studies have shown that endosonic irrigation

reaches the apex even in canals with a diameter of 0.1 mm.^{12,14} Debridement of canals should be closely linked with irrigation.¹⁵

Reasons for success or failure in endodontics may not depend entirely on one phase of the treatment. All steps in the endodontic process are important and success occurs when all have been completed adequately. Failure could result when one or more of the steps are inadequate. In this study, 93 per cent of the cases were successful; failure in 7 per cent may or may not have been related to the endosonic instrumentation.

Summary and conclusion

Forty endosonically treated cases were recalled eight to 33 months postoperatively and evaluated clinically and radiographically for success or failure. Ninety-three per cent of the cases showed no clinical symptoms or radiographic signs of failure. In this preliminary study, the success rate of endosonically treated cases was comparable to traditional endodontic methods. Δ

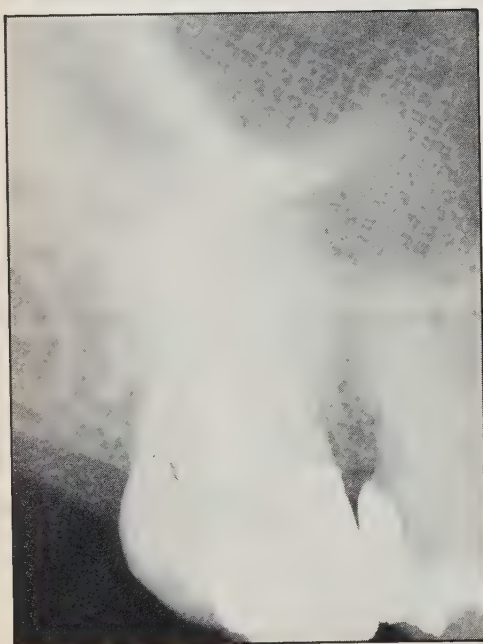
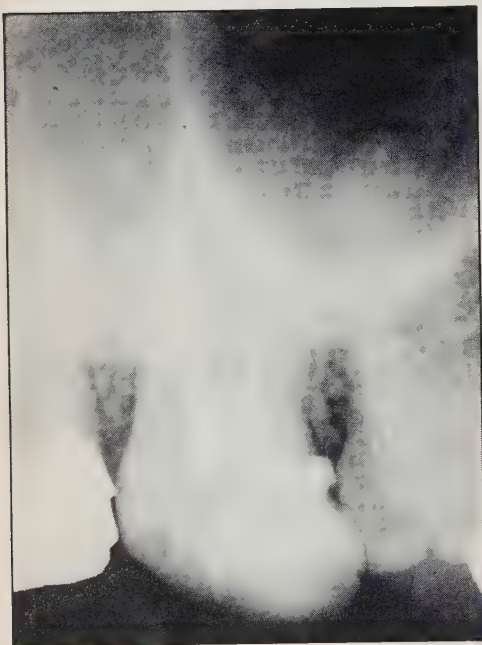


Fig. 1. Maxillary second molar instrumented endosonically.

- A. Immediately after obturation.
- B. No signs of failure 33 months after obturation.

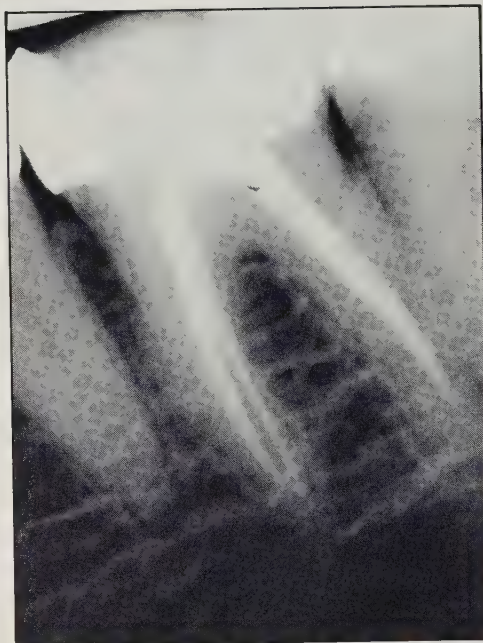


Fig. 2. Mandibular first molar instrumented endosonically.

- A. Immediately after obturation.
- B. Eleven months post-obturation.

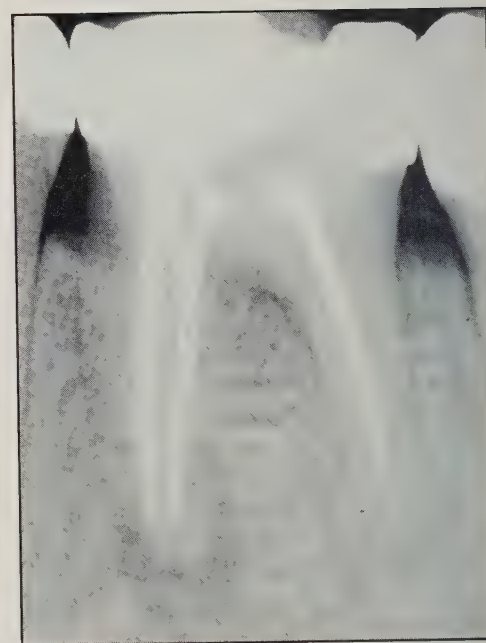


Fig. 3. Mandibular first molar prepared with endosonics.

- A. Immediately after obturation.
- B. Unresolved radiolucency 10 months post-operatively. Working length in one mesial canal was short and obturation was not dense.

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Reprint requests to Dr. Chenail.

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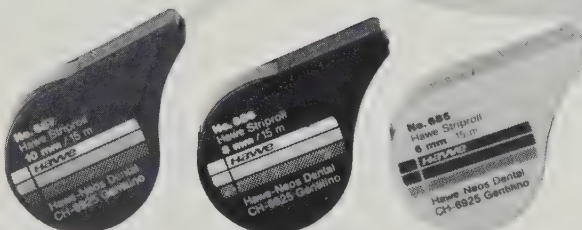
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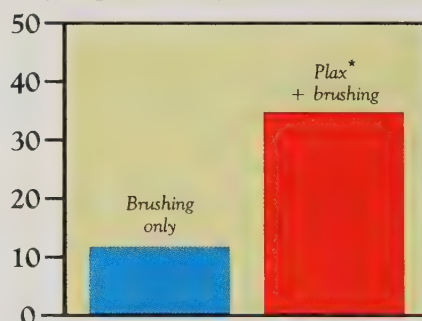
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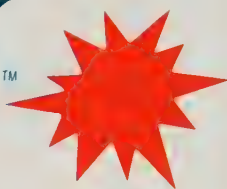
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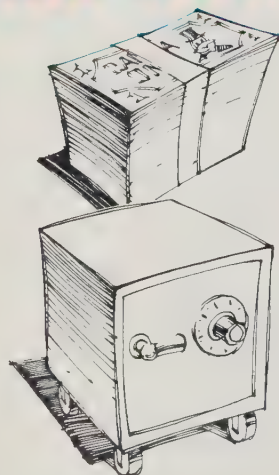
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INFECTION CONTROL SURVEY — 1988:

A Canadian Dental Association Project

J. Hardie, BDS, MSc, FRCD(C)

Preamble

The Canadian Dental Association (CDA) conducted a comprehensive health screening survey of delegates to the Annual Convention in 1985. The results of the survey were presented at the 1986 Convention. The section on Infection Control was prepared in the form of an article and submitted to the Journal of the CDA.¹ It has been accepted as a non-scientific speciality feature item.

Appreciating that there had been considerable publicity on transmissible diseases since 1985, the CDA Ad Hoc Committee on Infection Control suggested that a repeat survey should be performed at the 1988 CDA Annual Convention.

Introduction

The survey was conducted by enclosing a questionnaire on infection control practices in delegates' registration packages. The questions, apart from minor modifications, were similar to those asked in the 1985 survey. Approximately 1,200 dentists registered for the convention, and as of November 1, 1988, 93 survey forms had been returned to CDA Headquarters.

The questions were designed to obtain information on:

- A — Infectious Diseases
- B — Barrier Techniques
- C — Instrument Sterilization
- D — Office Cleanliness

The following report is divided into the four alphabetical sections listed above.



The first table in each section is an abbreviation of the question asked. The second table is a summary of the results. The comments provide an analysis of the results, while the recommendations indicate appropriate actions.

NOTE: The 93 responses approximate 100, therefore the total numerical responses to a question will approximate the percentage figure, consequently no

attempt has been made to calculate the accurate percentage figure for each response.

Report

A — Infectious Diseases

Table 1 — Questions

1. Have you experienced any of the following infections?
 - (a) Herpes Simplex virus
 - (b) Viral Hepatitis
 - (c) Tuberculosis
 - (d) Minor respiratory infections i.e. common cold
2. If yes to the above, do you believe they were contracted via your dental office?
3. Any other illness contracted via dental office environment?

Table 2 — Answers

1. (a) Herpes Simplex 23
- (b) Viral Hepatitis 7
- (c) Tuberculosis 1
- (d) Common Cold 87
2. Yes 37
- Including: Herpes Simplex 6
- Viral Hepatitis 5
- Tuberculosis 1
3. Yes 12

Comments: As in 1985,¹ the answers represented subjective assessments by the dentists, nevertheless 12 stated that they had acquired other diseases from

the office environment including: nail and finger infections (3), streptococcal sore throat (1), infectious mononucleosis (1), eye infection (1), severe cold (5), and stress related illness (2). It is assumed that these diseases plus the cases of viral hepatitis and tuberculosis, were confirmed by clinical and/or laboratory investigations.

In 1985,¹ one case of viral hepatitis was reported as compared to seven in this survey. According to the dentists' judgement five of these cases were acquired via their working environment. The results confirmed that the dental office is not only a focus for transmission of relatively mild diseases but of potentially fatal infections.

Recommendations: Appropriate infection control procedures must be practiced in every dental office to reduce the definite potential for the transmission of minor and major infectious diseases.

B – Barrier Techniques

Table 3 – Questions

- 1. Do you: Yes always, yes more than 50 per cent, yes less than 50 per cent, or no.
 - (a) Record a medical history for a new patient?
 - (b) Update this history at each recall visit?
 - (c) Wear protective gloves while treating patients?
 - (d) Use rubber dam for restorative procedures?
 - (e) Wear a face mask while treating patients?
 - (f) Wear either prescription or safety glasses while treating patients?
- 2. Have you received the Hepatitis B vaccine?

Table 4 – Answers

1.	Yes	> 50%	< 50%	No
(a)	89	3	–	1
(b)	42	33	17	1
(c)	72	6	12	3
(d)	47	21	14	11
(e)	63	7	13	10
(f)	83	6	2	2
2.	Yes			71
	No			19
	No reply			2

Comments: Barrier techniques are designed to protect patients and staff. This protection will not exist if their use is less than 100 per cent.

Medical histories may not accurately reflect the infectious potential of patients, but they do assist in assessing if patients have or have had a high risk status for

infectious diseases. As such, medical histories are an essential aspect of an effective infection control program. Of the responding dentists 89 per cent (see note on percentage calculations above) always recorded a medical history while less than half (42 per cent) updated this at subsequent recalls.

It is gratifying to record that the majority of dentists always use gloves (72 per cent), masks (63 per cent), and eyeglasses (83 per cent). This is a dramatic increase in utilization since the 1985 survey¹ when the equivalent figures were gloves (1 per cent), masks (10 per cent) and eyeglasses (59 per cent).

As stated in 1985,¹ rubber dam is an effective method of sequestering oral bacteria from the office environment. The present study demonstrates a utilization rate of 47 per cent which is considerably better than the previous figure of 17 per cent.¹

The survey indicates that almost three-quarters (71 per cent) of the respondents had received the Hepatitis B vaccine. This result compares very favourably with the 1985¹ results when only 25 per cent had been vaccinated.

It appears as if the recommended barrier techniques are being used more appropriately by an increasing number of responding dentists.

Recommendations: Although barrier techniques are more commonly used, still 21 per cent of dentists do not use gloves with an acceptable frequency. Infection control programs must emphasize that barrier techniques are only effective when they are in place. This includes the proper use of gloves, masks, and eyeglasses; the proven beneficial effects of Hepatitis B vaccination; and the valuable information to be gleaned from a regularly revised medical history.

C – Instrument Sterilization

Table 5 – Questions

- 1. Indicate the type and frequency of sterilization or disinfection of the following:
 - (a) Handpieces?
 - (b) Hand instruments (explorers, amalgam condensers, etc.)?
 - (c) Surgical instruments?
- 2. Is there a sterilizer in the office?
- 3. What type is it?
- 4. (a) Is a biologic monitor used to test the efficiency of the sterilizer?
 - (b) If yes, please specify type and frequency.
- 5. Would biologic monitoring be used if such a service was readily available?

Table 6a – Answers

1. (a) Sterilization	13
After each patient	8
Two to four times per day	2
Daily	–
Other (after surgery)	1
Frequency not recorded	1
Disinfection	78
After each patient	71
Two to four times per day	–
Daily	1
Other	–
Frequency not recorded	6
(b) Sterilization	61
After each patient	51
Daily	2
Frequency not recorded	8
Disinfection	30
After each patient	27
Daily	–
Frequency not recorded	3
(b) Sterilization	91
After each patient	77
Daily	1
Frequency not recorded	13
Disinfection	0
2. Yes	91
3. Autoclave	32
Chemiclave	44
Dry Heat Oven	5
Autoclave and Chemiclave	5
Autoclave and Dry Heat Oven	2
Chemiclave and Dry Heat Oven	2
Two Chemiclaves	1
4. (a) Yes	23
(b) Type unstated:	
each cycle	1
weekly	2
Spore tests:	
semi-monthly	2
monthly	4
2-4 per year	5
annually	1
Colour strips: each cycle	6
No details given	2
5. Yes	75
No	3
No reply	13

Comments: The results suggest that the majority of responding dentists disinfected handpieces (71 per cent) after each patient rather than follow the recommendations regarding sterilization. However, there has been a considerable change in practice from 1985 when no dentists reported that handpieces were sterilized after each patient. In a similar manner the majority of dentists (61 per cent) sterilized hand instruments although (17 per cent) of these did not follow the recommendations by sterilizing after each

patient use. The majority of respondents did comply with accepted guidelines regarding the sterilization of surgical instruments.

All dentists who replied to this series of questions (note two did not) indicated that a sterilizer was present in the office. Indeed a few had more than one sterilizer. Only 23 per cent recorded that the sterilizers were regularly tested for efficiency, however the type and frequency of testing suggests that few dentists appreciated the recommended method of monitoring sterilizers. The majority, 75 per cent, would use a sterilization monitoring service if it was readily available.

Although the specific question was not asked, 11 dentists indicated the type of disinfectant used on either handpieces or hand instruments. The range included: gluteraldehydes, phenols, quarternary ammonium compounds, bleach, and alcohol. Brand products, dilutions and exposure times were not recorded.

It appears that since 1985 more responding dentists have not only become aware of the need but are actually sterilizing most dental instruments.

Recommendations: The positive attitude towards sterilization should be encouraged. Emphasis must continue to be placed on the need to sterilize handpieces. A national monitoring service for sterilization should be established.

D – Office Cleanliness

Table 7 – Questions

- 1. Indicate the type and frequency of disinfecting the following:
 - (a) Dental chair?
 - (b) Countertops?
 - (c) Instrument (bracket) table?

Table 8 – Answers

1. (a) Disinfect	89
After each patient	50
Two to four times per day	4
Daily	24
Other	1
Frequency not recorded	10
(b) Disinfect	91
After each patient	56
Two to four times per day	3
Daily	21
Other	-
Frequency not recorded	10
(c) Disinfect	90
After each patient	70
Two to four times per day	-
Daily	7
Other	1
Frequency not recorded	12

Comments: This series of questions was asked to assess the cleanliness of the operatory. It is gratifying to record that the majority of respondents did report disinfection of working surfaces after each patient visit. This compares most favourably with the 1985 survey. While the frequency rates should be increased in some instances, the replies suggested that the operatory might be a safer working environment than it was three years previously. The variety of disinfectants included: alcohol, phenol, bleach, gluteraldehyde, iodophore, and quaternary ammonium compound. The range suggested that users had either an individual preference, or were not sure as to the efficiency of one product versus another.

Recommendations: The accepted guidelines regarding office cleanliness must continue to be promoted. A National Standard for Disinfectants would permit dental personnel to make an unbiased judgement on appropriate disinfectants without having to assess the claims of prejudiced manufacturers and distributors.

Specific Comments

Four dentists supplied additional comments. In general these concerned the need for simple guidelines on infection control and its implementation, and an update on disinfectants especially those approved by the CDA.

One dentist did include a page of concerns. The theme was that hospital based or central clinics should be established for "high risk" patients. The dentist appreciated that this would not prevent undiagnosed carriers from being treated in private offices. The respondent further suggested that legislation on infection control would be necessary to prevent "carriers" transmitting disease in private practices, and that such legislation would not be implemented until a terminal infection had been proven as having been acquired via infection from the dental office.

Conclusions

The less than 10 per cent response to the survey is unfortunate. The results indicate a greater compliance to accepted recommendations than was apparent after the 1985 survey, however it is not possible to extrapolate from the minimal returns that this trend is typical of the majority of delegates attending the Convention or of Canadian dentists. It is feasible that only those with an active interest in infection control or who believed that they were adhering to current recommendations completed the questionnaire. Thus any mood of cau-

tious optimism must be balanced by the statistically insignificant nature of results.

The responses do indicate that there remains a number of dentists who are either not familiar with current guidelines or, for a variety of reasons, choose not to practice modern infection control techniques. It is obvious that education is still required in the areas of: proper barrier precautions, handpiece sterilization, and sterilizer monitoring. Information on effective disinfectants, and the establishment of a national sterilizer testing program, would appear to be needed projects. Articles, education courses, and guidelines must continue to stress that 100 per cent of all active dental personnel should receive a Hepatitis B vaccination.

The profession and the public share concerns regarding the spread of infectious diseases from the dental office environment. To address doubts or questions in a logical, justified manner it is necessary to know what is the present state of infection control. The 1985 and 1988 surveys have provided minimal information. A national survey mechanism should be developed which will continue to monitor the trends in the prevention of infectious disease transmission as practiced by the family dentist.

Addendum

The author of this report has, since its completion, been in receipt of a survey titled "Dental Infection Control Practices in Calgary, Alberta, 1987" [2]. Similar questions in the 1988 CDA Survey and the Calgary Survey produced similar responses among the respondents. For example, comparable results were obtained for: glove use, instrument sterilization, and use of disinfectants. This suggests that the CDA Survey results may reflect a national trend, however it is also possible but unlikely that all 93 dentists who completed the CDA Survey had previously participated in the Calgary study. Δ

References

1. Hardie, J., and Blahut, P. Infection Control in the Dental Office: The Canadian Dental Association Health Screening Project. (Unpublished)
2. Abrams, R., Gill, M.J., and McGowan, R. Dental Infection Control Practices in Calgary, Alberta 1987. (Unpublished)

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Engerix®-B

Hepatitis B Vaccine (recombinant)

Description Engerix®-B [hepatitis B vaccine (recombinant)] contains purified hepatitis B surface antigen (HBsAg). It is the product of recombinant DNA technology developed by SmithKline-RIT, s.a., Belgium.

The HBsAg gene from the hepatitis B virus has been cloned by genetic engineering into *Saccharomyces cerevisiae*. The production of the vaccine involves an optimized fermentation process followed by disruption of the yeast cells and extraction of HBsAg. Subsequent purification processes include precipitation steps, ion exchange and gel permeation chromatography, and caesium chloride ultracentrifugation. Standardization of the methods of fermentation and purification procedures ensures lot-to-lot consistency.

In vitro experiments have shown that the yeast-derived HBsAg in Engerix®-B contains all the epitopes (antigenic sites) that have been found in the HBsAg in plasma-derived vaccines.

In vivo, the human antibody response to Engerix®-B is similar to the response to plasma-derived vaccines with respect to epitope specificity and avidity. There is no significant modification of the anti-yeast antibody titre after vaccination with Engerix®-B.

These studies indicate that Engerix®-B is immunologically similar to the plasma-derived vaccines and provides similar protective efficacy.

Since no substances of human origin are used in the production of Engerix®-B, the potential for transmission of diseases associated with blood and blood products is eliminated. Potency, safety and sterility are verified for each lot.

The vaccine is a slightly opaque, white, sterile suspension. A slow settling of the white aluminum hydroxide may occur during storage leaving a clear colourless supernatant liquid. Each 1 mL dose of vaccine contains 20 µg of hepatitis B surface antigen adsorbed onto 0.5 mg of Al⁺⁺⁺ as aluminum hydroxide with 0.005% thimerosal as preservative.

In comparative studies commercial plasma-derived vaccines and Engerix®-B exhibited comparable potency in mice and guinea pigs, and comparable protective efficacy in chimpanzees.

Engerix®-B is also highly immunogenic in rabbits, goats and monkeys.

Indications and clinical use Engerix®-B [hepatitis B vaccine (recombinant)] is indicated for active immunization against hepatitis B virus infection. The vaccine will not protect against infection caused by hepatitis A and non-A non-B hepatitis viruses. As hepatitis D (caused by the delta agent) does not occur in the absence of hepatitis B infection or carrier state, it can be expected that hepatitis D will also be prevented by vaccination with Engerix®-B.

The vaccine can be administered at any age from birth onwards. It may be used to start a primary course of vaccination or as a booster dose. It may also be used to complete a primary course of vaccination started with plasma-derived or yeast-derived vaccines or as a booster dose in subjects who have previously received a primary course of vaccination with plasma-derived or yeast-derived vaccines.

In areas of low prevalence of hepatitis B, vaccination is strongly recommended in subjects who are at increased risk of infection. These include the following groups:

Health care personnel: physicians and surgeons; oral surgeons and dentists; nurses, dental nurses, dental hygienists, podiatrists; IV teams and operating room personnel; paramedical personnel in close contact with patients; staff in hemodialysis, nephrology, hepatology, hematology and oncology units; laboratory personnel handling blood and other clinical specimens; blood bank and plasma fractionation workers; pathologists and morgue attendants; cleaning staff who handle waste in hospitals; emergency and first aid workers; ambulance staff; dental, medical and nursing students.

Patients: patients receiving frequent blood transfusions or clotting factor concentrates, such as those in oncology units and those with thalassemia, sickle-cell anemia, cirrhosis, hemophilia, etc. patients on hemodialysis.

Personnel and residents of institutions: persons with frequent and/or close contacts with high-risk groups; prisoners and prison staff; residents and staff of institutions for the mentally retarded (those who are in contact with aggressive biting residents being at highest risk).

Persons at increased risk due to their sexual practices: sexually promiscuous persons; persons who repeatedly contract sexually transmitted disease; homosexually active males; prostitutes.

Persons who use injectable drugs illicitly

Travellers to areas of high endemicity and their close contacts

Household contacts of any of the above groups and of patients with acute or chronic hepatitis B infection

Infants born of HBsAg-positive mothers

Others: police; fire fighters; armed forces personnel; morticians and embalmers; those who through their work or personal lifestyle may be exposed to the hepatitis B virus.

In areas of both low and high prevalence vaccination should be offered to all young children and neonates at risk as well as to adult high risk groups.

Contraindications Hypersensitivity to any component of the vaccine. As for any vaccine, Engerix®-B [hepatitis B vaccine (recombinant)] should not be administered to subjects with severe febrile infections. Vaccination of a subject with febrile symptoms, with a respiratory infection, or with a contagious or any other disease should be postponed until after recovery. However, the presence of a trivial infection does not contraindicate vaccination.

Warnings Because hepatitis B has a long incubation period it is possible that there may be latent infection at the time of vaccination. Engerix®-B [hepatitis B vaccine (recombinant)] may not prevent hepatitis B in such cases.

Patients who develop symptoms suggestive of hypersensitivity after an injection should not receive further injections of Engerix®-B (see CONTRAINDICATIONS).

Engerix®-B should not be administered in the gluteal region or intradermally since these routes of administration may not result in an optimum immune response. Intradermal administration may also result in severe local reactions. The vaccine must never be administered intravenously.

In dialysis patients and subjects who have an impairment of the immune system, adequate antibody concentrations may not be maintained after a primary vaccination course of 40 µg doses. Such patients may require repeated administrations of the vaccine.

Precautions A new sterile syringe and a new sterile needle should always be used so as to prevent the transmission from one subject to another of infectious agents, such as the hepatitis B virus, non-A, non-B hepatitis virus or the human immunodeficiency virus (HIV).

The effect of the antigen on fetal development is unknown and therefore vaccination of pregnant women cannot be recommended. However, vaccination of a pregnant woman may be considered in order to prevent hepatitis B in high-risk situations.

As with all biologicals, a solution of 1 in 1,000 adrenaline should always be readily available for immediate use in case of a rare anaphylactic reaction.

Adverse Reactions Engerix®-B [hepatitis B vaccine (recombinant)] is very well tolerated. In 47 studies, 5466 subjects received from one to four doses of Engerix®-B for a total of over 15,000 doses. No serious or severe reactions attributable to the vaccine were reported. The incidence of local and systemic reactions reported in each study was similar to those seen with plasma-derived vaccine, and tended to decrease after successive doses of vaccine.

The most commonly reported local reactions were soreness, erythema and swelling at the injection site as seen with all adsorbed vaccines. These reactions were mild and usually subsided within two days after vaccination. Systemic complaints such as fever, headache, nausea, dizziness and fatigue have occurred rarely; a causal relationship with the vaccine has not been established.

Dosage Adults, children and infants: The same 1 mL dose of 20 µg of Engerix®-B [hepatitis B vaccine (recombinant)] is recommended for subjects of all ages.

Hemodialysis and immunocompromised patients: A 2 mL dose of Engerix®-B (40 µg) is recommended.

For individuals in whom a primary vaccination schedule has been initiated with a plasma-derived vaccine, dosing may be continued with Engerix®-B.

Engerix®-B can effectively boost anti-HBs responses initially elicited by either plasma-derived or yeast-derived vaccines.

Vaccination Schedules

	3 DOSE SCHEDULE	4 DOSE SCHEDULE	SCHEDULE FOR HEMODIALYSIS PATIENTS
20 µg PER DOSE*	Timing of doses	Timing of doses	Timing of doses
1st DOSE	ZERO time	ZERO time	ZERO time
2nd DOSE	1 MONTH after 1st dose	1 MONTH after 1st dose	1 MONTH after 1st dose
3rd DOSE	6 MONTHS after 1st dose	2 MONTHS after 1st dose	2 MONTHS after 1st dose
4th DOSE	—	12 MONTHS after 1st dose	6 MONTHS after 1st dose

*N.B.: 40 µg for hemodialysis and immunocompromised patients.

Engerix®-B may be administered according to the 3 dose schedule historically used with other hepatitis B vaccines.

For more rapid protection a 4 dose schedule results in the development of protective anti-HBs titres by 3 months. The fourth dose (at 12 months) is required to maintain prolonged protective anti-HBs titres.

For hemodialysis patients, a 4 dose schedule at 0, 1, 2 and 6 months is recommended.

Booster Doses: Experience with plasma-derived vaccines has shown that anti-HBs titres gradually decline over time. It is expected that this will also be true for Engerix®-B. Engerix®-B can effectively boost anti-HBs responses initially elicited by either plasma-derived or yeast-derived vaccines.

A booster dose (20 µg) should be considered 5 years after the last dose.

For hemodialysis and immunocompromised patients, a booster (40 µg) may be required sooner. Regular serological monitoring is recommended to ensure that antibodies are and remain at protective levels.

Administration Check the expiry date of the vaccine carefully. Do not use vaccine beyond its expiry date.

Shake the vaccine well before use so as to resuspend the sediment of fine white particles of adjuvant (aluminum hydroxide) which settles during storage.

Clean the skin at the site of injection with a suitable antiseptic and dry with a piece of dry sterile cotton. Disinfect the rubber stopper with antiseptic; wipe it dry with a dry, sterile cotton swab; then using a sterile needle, withdraw 1 mL from the vial into a sterile syringe.

Engerix®-B should be injected intramuscularly. In adults the injection should be given in the deltoid region. In neonates and infants it may be preferable to inject Engerix®-B in the anterolateral thigh because of the small size of their deltoid muscle. In special circumstances the vaccine may be administered subcutaneously in patients with severe bleeding tendencies (e.g., hemophiliacs).

ENERGIX®-B MUST NOT BE GIVEN INTRAVENOUSLY OR INTRADERMALLY Engerix®-B may be administered simultaneously with hepatitis B immunoglobulin (HBIG); however it must be administered at a separate injection site.

Availability 1 mL single dose vial containing 20 µg of hepatitis B surface antigen per vial in a carton with Prescribing Information leaflet.

Storage and Stability: The vaccine should be shipped under refrigeration and stored at 2°C to 8°C (35.6°F to 46.4°F). DO NOT FREEZE. Vaccine which has been frozen is no longer potent and should be discarded.

When stored at 2°C to 8°C (35.6°F to 46.4°F), the shelf life of Engerix®-B is two years from the date of manufacture. The expiry date is shown on the label.

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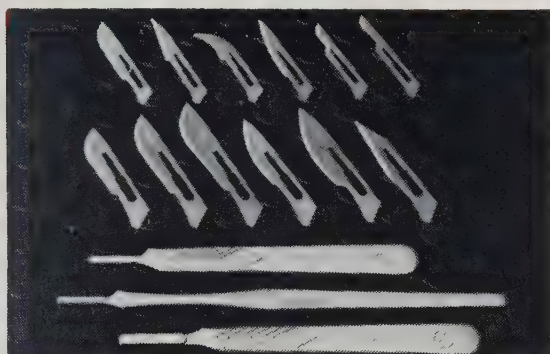
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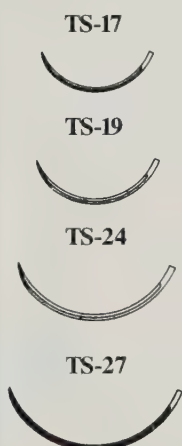
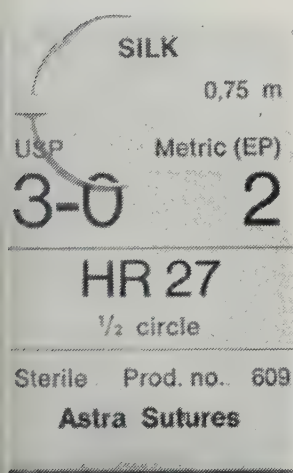
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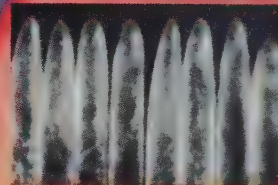
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THE USE OF PULSE OXIMETRY

in the immediate recovery phase following dental extractions under general anesthesia in children

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ABSTRACT

Over the past decade, an array of monitoring devices have been developed to continuously assess patient oxygenation. While actual tissue oxygenation is the most desirable measurement, the pulse oximeter offers a non-invasive method of measuring oxygenation of arterial blood. In this study, the arterial oxygen saturation (SaO_2) of children presenting for oral surgical procedures under general anesthesia was continuously monitored. We were particularly interested in the saturation during the period from termination of anesthesia until arrival in the recovery room, a potentially critical 2-3 minutes. This study showed that 22.5 per cent of children significantly desaturated ($\text{SaO}_2 < 90$ per cent) during this period — a figure which is in complete agreement with several similar studies done recently. This desaturation preceded not only hemodynamic changes, but frequently changes in tissue and blood colour as well. The authors conclude that children should receive supplemental oxygen in the immediate recovery phase following general anesthesia.

SOMMAIRE

Au cours de la dernière décennie, on a mis au point divers appareils pour surveiller continuellement si les patients sont bien oxygénés. Bien que l'oxygénation des tissus soit la meilleure méthode de contrôle, l'oxymètre constitue une méthode non envahissante pour mesurer

l'oxygénation du sang artériel. Dans cette étude, on a surveillé sans arrêt le degré de saturation du sang artériel en oxygène (SaO_2) chez certains enfants soumis à des procédures chirurgicales buccales sous anesthésie générale. On s'est particulièrement intéressé au degré de saturation à partir du moment où on cessait l'anesthésie jusqu'à l'arrivée dans la salle de réveil — une période de deux à 3 minutes qui risque d'être critique. On a découvert que chez 22,5 pour cent des enfants la désaturation était considérable ($\text{SaO}_2 < 90$ pour cent) durant cette période, une donnée qui s'accorde tout à fait aux résultats de plusieurs autres études semblables effectuées récemment. Cette désaturation précédait non seulement des modifications hémodynamiques, mais souvent aussi des modifications dans les tissus et la couleur du sang. Aussi a-t-on conclu qu'il convient d'administrer une dose supplémentaire d'oxygène aux enfants dans la phase immédiate de réveil qui suit l'anesthésie générale.

Introduction

Monitors, including pulse oximetry, which provide continuous measurements of a patient's oxygen level, are emerging as important tools in preventing anesthetic mishaps. It is generally agreed that the number one cause of anesthetic morbidity and mortality involves respiratory management, and many of these incidents could be prevented with better monitoring. It has been further estimated that 69 per cent of

respiratory-related mishaps were preventable and pulse oximetry alone might have prevented at least 24 per cent of these.¹ Although these findings must be interpreted cautiously, the physiologic upset to the patient, both during and immediately following general anesthesia, demands vigilance on the part of the anesthetist.

The Pulse Oximeter

The functioning of a pulse oximeter is based on the assumption that hemoglobin exists in two principal forms in the blood:

- oxygenated (with O_2 molecules loosely bound) or HbO_2
- reduced (with no O_2 molecules bound) or Hb

Arterial oxygen saturation (SaO_2) is defined as the ratio of oxygenated hemoglobin (HbO_2) to total hemoglobin [$\text{HbO}_2 + \text{Hb}$ (+ other forms of hemoglobin present in arterial blood)]:

$$\text{SaO}_2 = \frac{\text{HbO}_2}{\text{HbO}_2 + \text{Hb} (+ \text{other forms of hemoglobin present in arterial blood})}$$

Pulse oximeters measure *functional* oxygen saturation, i.e., the ratio of oxygenated hemoglobin to all hemoglobin that is capable of transporting oxygen. Two wave-lengths of light — red and infrared — are utilized to gauge the presence of oxygenated and reduced hemoglobin. Since oxygenated hemoglobin and reduced hemoglobin absorb light as known functions of wave-lengths, the relative percentage of these two constituents and

SaO₂ are calculated utilizing Beer's Law.²

To obtain the proper measurements, the instrument's sensor uses two light-emitting diodes (leds), one led emits red light (approximately 660 nm) and the other emits infrared light (approximately 910 nm). These wave-lengths were selected because of the absorption characteristics of oxyhemoglobin (absorbs more infrared light) and deoxyhemoglobin (absorbs more red light).^{2,3}

The pulsation of arterial blood flow present at a particular test site modulates the light emitted by the oximeter's probe. Since other fluids and tissues at the test site generally do not pulsate, they do not modulate the light passing through the test site area. Therefore, the attenuation of light energy due to arterial blood flow can be detected and isolated, thus providing the basis for the necessary calculations. In other words, for a given site, light absorption is constant except for increased absorption from the arterial pulse-added volume. The influx of blood increases the absorption of both wave-lengths, but because this blood is particularly high in oxyhemoglobin, proportionately more infrared light is absorbed.

Thus, the oximeter determines a patient's arterial oxygen saturation (SaO₂) and pulse rate by measuring the absorption of selected wave-lengths of light. The light generated in the probe passes through the tissue and is converted into an electronic signal by the photodetector. The electronic signal passes to the oximeter and is amplified. Analog and digital processing converts the light intensity information into SaO₂ values. A liquid crystal display (LCD) presents, and the oximeter printer records SaO₂ and pulse rates.

The relationship between SaO₂ and PaO₂ (partial pressure of oxygen in arterial blood) is expressed by the oxygen dissociation curve shown in Figure 1. This oxygen dissociation curve may shift to the right, because of an increase in body temperature, low blood pH, increase in 2,3-diphosphoglycerate or hypercarbia. This results in less affinity of hemoglobin for oxygen, hence increased unloading of oxygen at the tissue level. A shift to the left due to increased blood pH, decreased body temperature, decreased 2,3-diphosphoglycerate or hypocarbia, results in less unloading of oxygen at the tissue level. This results in a higher SaO₂ at any given PaO₂.

Because pulse oximetry is based on optical measurements, a pulse oximeter performs accurately only when its sensor is used correctly. The following precautions should be taken:³⁻⁵

TABLE I

Advantages and disadvantages of pulse oximetry

Advantages	Disadvantages
— non-invasive — continuous monitoring — readings are essentially independent of cardiac output — no site preparation required — no warm-up time — no calibration required — easy to use	— at levels above 90% SaO₂, it tells little about PaO₂ — by definition, it tells little about actual ventilation, carbon dioxide levels do — shifts in the oxygen dissociation curve are not accounted for — tells little about the actual delivery of oxygen to tissues — carboxyhemoglobin and methemoglobin may cause inaccuracies

- Place the transmitting and receiving components directly opposite to one another,
- Avoid probe application on the same side as the blood pressure cuff. Inflation of the cuff will abolish the signal and requires up to six seconds following deflation for the oximeter to begin proper function again.
- Avoid the largest digits as the increased tissue bulk may block proper light transmission.
- Nail polish must be removed.
- Long fingernails may preclude proper sensor placement.
- The sensor should be shielded from ambient light. All of the light received by the detector must have first passed through the arterial bed.
- Pulse oximeters are often subject to motion artifacts so should be secured in place.

Despite proper placement, pulse oximeters have certain limitations which can alter function and proper interpretation. The oximeter will not function ideally in the presence of high concentrations of methemoglobin or carboxyhemoglobin. A reduced pulse wave due to such things as hypothermia, anxiety, hypovolemia, hypotension, or cardiac dysrhythmia may also cause loss of proper function.⁶ Pigmented skin fortunately has no adverse effect. Precision has been shown to differ between instruments, particularly at the very low saturation levels (less than 70 per cent), as this range is usually determined by extrapolation rather than actual calibration, suggesting a possible area of improvement by manufacturers.⁶ Some of the advantages and disadvantages of pulse oximetry are listed in Table 1.

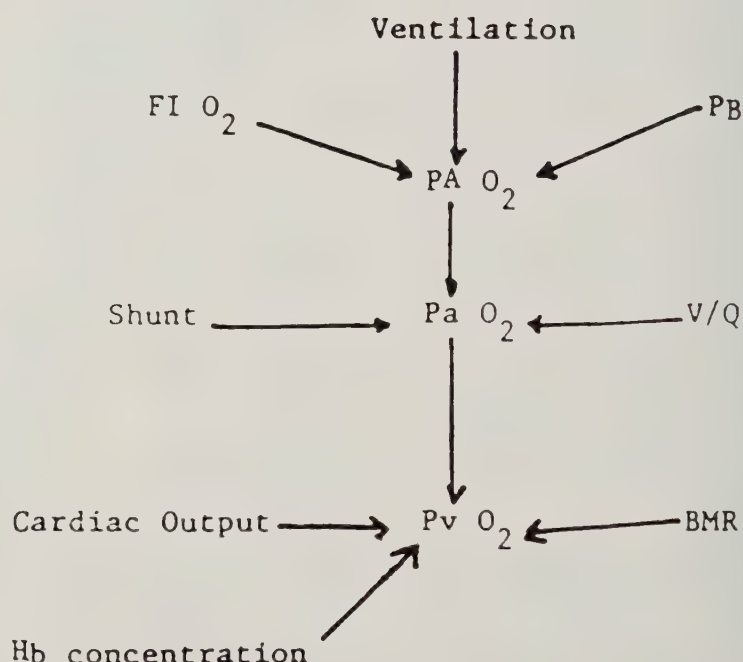


Fig. 1. The oxygen dissociation curve. Note the nonlinear nature of the curve. On the lower steep portion of the curve, doubling PaO₂ more than triples SaO₂; however, on the flat upper portion, an increase in PaO₂ has minimal impact on SaO₂. PaO₂ represents the partial pressure of oxygen in arterial blood, the SaO₂ the percent saturation.

Methods

A total of 31 healthy ASA Class I children of either sex presented at the Faculty of Dentistry, Department of Anesthesia, for oral surgery procedures under general anesthesia. There were 19 males and 12 females, with a mean age of 8.4 years (range 4-13 years). All children were anesthetised in the morning, and presented n.p.o. from midnight the night before. An updated medical history was taken and a physical examination was performed prior to induction.

All children were slowly induced with Halothane (up to 3.5 per cent) and nitrous oxide and oxygen (70:30) via a continuous flow Mapleson A classification, Magill circuit with total flows equal to the patient's calculated minute volume. A nasal inhaler was used. Children were monitored with a blood pressure cuff, precordial stethoscope, temperature monitoring strip, 3-lead ECG (Lifepak 4 Physio-Control Corp. Washington), and pulse oximetry (Biox IVA, Ohmeda, Boulder, Co.) placed on an index finger on the arm opposite the one with the blood pressure cuff. The nitrous oxide and oxygen flow meters were incorporated in a MDM Quantiflex head, the Halothane being administered via a Fluotec Mark III vaporizer. Following inhalation induction, a 21-gauge butterfly was placed in a peripheral vein, nine children receiving from 10 – 30 mg of methohexital (Brietal) intravenously to smooth induction. All children were permitted to breathe spontaneously. Although laryngoscopy was performed on six children, no intubations were performed. Following induction, a mouth prop was placed, the throat suctioned and a gauze oropharyngeal partition was placed. Local anesthesia (3 per cent Carbocaine) was

utilized in every case. Blood pressure and pulse were recorded at five-minute intervals, while ECG and precordial breath and heart sounds were monitored continuously. Any SaO₂ less than 97 per cent for at least three seconds was recorded.

Following completion of the oral surgery, all patients were permitted to breathe 100 per cent oxygen until they were making purposeful movements, at which time oxygen administration was discontinued, all monitors were disconnected and the patients were transported to the recovery area (2-3 minutes). SaO₂ was continuously monitored during this time.

Results

The mean preoperative arterial oxygen saturation was 98.4 per cent. Induction of anesthesia was complete (Stage 3, Plane 2) in an average of 5.2 minutes, while the actual surgical procedures took an average of 12.6 minutes with a range of 3-32 minutes. Following discontinuation of all anesthetic agents, purposeful movements were seen within a mean of 3.9 minutes (range 3-10 minutes). The prime purpose of this investigation was to observe SaO₂ changes, as measured by pulse oximetry, during the critical period following discontinuation of supplemental oxygen and during transport to the recovery facility. Figure 2 shows a distribution of observed SaO₂'s during this period (2-3 minutes).

Frequency represents the number of patients who experienced at least one episode of low saturation for a period of at least three seconds during this period.

Only one patient, a four-year old boy, whose saturation fell to 64 per cent, showed any visible signs of cyanosis. His pulse and blood pressure remained essen-

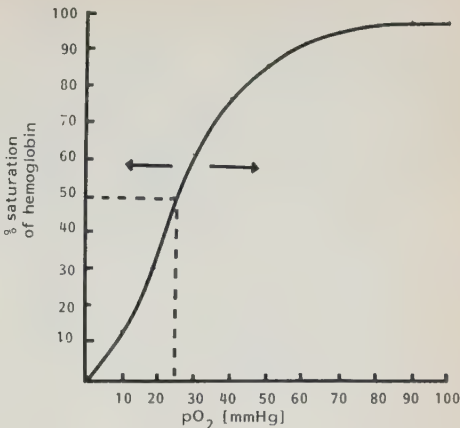


Fig. 3. The oxygen cascade. P_B represents barometric pressure, FI O₂ is the inspired per cent of delivered oxygen, PA O₂ the alveolar pressure of oxygen, P_a O₂ the arterial partial pressure of oxygen, P_v O₂ the venous partial pressure of oxygen, V/Q the ratio of lung ventilation to lung perfusion by mixed venous blood. BMR represents the basal metabolic rate, and Hb the hemoglobin concentration in blood.

tially unchanged from readings at the discontinuation of anesthesia, at which time his SaO₂ was 100 per cent.

Discussion

Figure 3 represents a flow diagram of the factors affecting arterial oxygenation.^{7,8} Each of these factors, in turn, can be considered when considering the major causes of hypoxia – hypoxic hypoxia, stagnant hypoxia, anemic hypoxia and histotoxic hypoxia.⁸

During general anesthesia for dental extractions, hypoxia has been reported in at least 20 per cent of cases⁹ as well as being a major complication in sedation of pediatric dental patients.^{10,11} The anesthetist cannot focus his exclusive attention on the patient's colour – one of the classic clinical signs of hypoxemia – as patient care involves diverse duties. Obviously, total prevention of hypoxia is best; next best is the earliest possible detection followed by corrective action.

During general anesthesia, all of our patients breathed 30 per cent oxygen, almost 10 per cent above room air, and 100 per cent oxygen for at least three minutes during recovery. However, following discontinuation of 100 per cent oxygen, 38.7 per cent of the children showed mild hypoxemia (Sa O₂ 90-97 per cent), 16.1 per cent showed moderate hypoxemia (Sa O₂ 75-89 per cent), and 6.4 per cent showed severe hypoxemia (Sa O₂ less than 75 per cent) as defined by Mueller et al.¹⁰ These figures are in agreement with Pullerits et al.,¹² who performed a similar study at The Hospital for Children, Toronto, and noted that 28 per cent of children showed significant desaturation (less than 90 per cent)

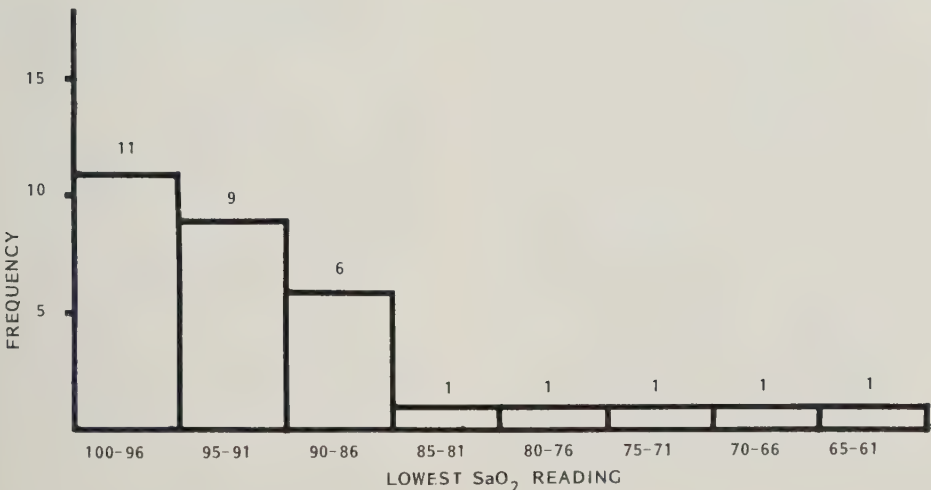


Fig. 2. Frequency distribution of SaO₂ during the recovery period.

during transport to the recovery room, with more than half of these showing no clinical signs of hypoxia. Similarly, Bissonette and Scott¹³ found 20 per cent of adult patients significantly desaturated to less than 90 per cent within 3-4 minutes during transport to the recovery room. Others have noted pulse oximetry to be a more reliable sign of hypoxia than clinical signs.^{14,15}

Monitoring of respiratory function has been described in several definite stages, as outlined in Table II.¹⁶

TABLE II

The methods of monitoring various phases of respiratory function¹⁶

Function	Method of Monitoring
Oxygen delivery	Inspired oxygen monitor
Airway mechanics including apnea/obstruction/depth of anesthesia	Precordial stethoscope Visual patterns — patient — expiratory valve — reservoir bag
Gas exchange	Colour of blood/tissues Pulse oximeter

One of the major causes of hypoxia is upper airway obstruction, which usually results from the tongue falling back against the posterior wall of the pharynx, although secretions, foreign bodies and laryngospasm, may also be causes of upper airway obstruction. Selective depression of genioglossus function during anesthesia may explain the obstruction caused by the tongue.¹⁷ Clearly, upper airway obstruction will decrease oxygen delivery to the lungs. In our patients, the airway appeared from visual and auscultatory signs to be adequately maintained at all times including the recovery phase. Despite this, respiratory patterns and mechanics are altered during spontaneous ventilation, both during and after anesthesia, which could alter proper oxygenation.^{7,8,17}

The functional residual capacity (FRC) falls during anesthesia for many reasons.^{7,16,17} Although FRC in children and adults is similar on a per kilogram basis (30 ml/Kg), it is in absolute terms a smaller volume in children than that of the adult. If each ml of blood perfusing the lung removes 0.05 ml/oxygen as it passes through the lungs⁷ — and children have a higher cardiac output and metabolic rate than adults — then this reserve

(FRC), even if filled with a high concentration of oxygen due to 100 per cent oxygen administration immediately after cessation of anesthesia, would be quickly depleted, especially if combined with the post-anesthetic effects of diffusion hypoxia.¹⁷ Diffusion hypoxia would probably be of limited importance in our study as all patients breathed 100 per cent oxygen for at least three minutes following cessation of nitrous oxide. As FRC is reduced below normal, there is impingement of tidal volume on closing capacity and ventilation perfusion ratios are altered such that blood flows through collapsed or non-ventilated lung. Hypoxemia could thus rapidly ensue. Even uncomplicated anesthesia causes abnormalities of distribution of pulmonary blood flow and inspired gas, which may be further altered by the different chest wall mechanics of the child.^{7,12,17} The inhibition of hypoxic pulmonary vasoconstriction (HPV) by inhalational anesthetics, including nitrous oxide, is probably a major factor in the maldistribution of pulmonary blood flow during anesthesia.¹⁷ This was further compounded by the fact that during transport to the recovery area our patients were breathing only room air.

Another possible cause of the witnessed hypoxia during this time could be the residual effects of anesthetics on ventilation *per se*, as well as on the patient's response to hypoxia and hypercarbia. 0.1 Mac of Halothane — levels far below induction and maintenance levels — significantly reduce the patient's response to hypoxia.¹⁸

Summary

We investigated 31 healthy children in the immediate post-anesthetic period during transport to the recovery room after general anesthesia for dental extractions. It was noted that over 22 per cent showed significant oxygen desaturation (less than 90 per cent) during this short 2-3 minute period, despite breathing 100 per cent oxygen for at least three minutes immediately following cessation of anesthesia. This would suggest that all patients should be transported to the recovery area with supplemental oxygen, which should be continued in the recovery room. Rubsomen¹⁹ describes a number of cases involving significant morbidity and mortality — both intra-operatively and postoperatively — which he believes could have been prevented with the use of continuous pulse oximetry monitoring. Δ

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RETENTION OF THREE POST AND CORE SYSTEMS

with and without etching

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Dennis C. Smith, DSc, MSc, PhD

ABSTRACT

The retentive strength of post and cores fabricated entirely of composite material was compared to the retentive strength of Para Posts with composite cores in etched and unetched post preparations.

Under tensile forces exerted upon the cores, only one post was removed. In all other samples the posts remained firmly embedded within the roots. The core material fractured at the occlusal surface of the roots. The Para Post with Composite core cemented into etched preparations was significantly more resistant to fracture than all other samples.

SOMMAIRE

Dans les préparations des tenons gravés et non gravés à l'acide, on a comparé le pouvoir de rétention des tenons et des noyaux fabriqués entièrement d'un matériau en résine composite à celui des tenons Para avec des noyaux en résine composite.

Sous des forces de tension exercées sur les noyaux, un seul tenon a cédé. Dans tous les autres cas, les tenons sont restés fermement ancrés dans les racines, mais le matériau s'est fracturé à la surface occlusale des racines. Par contre, les tenons Para avec un noyau en résine composite cimentés dans les préparations gravées à l'acide se sont révélés de beaucoup plus résistants que les autres aux fractures.

Many authorities currently recommend that endodontically treated anterior teeth be restored with

post and core restorations.¹⁻⁵ To achieve adequate retention, the posts which are either prefabricated or cast, are extended rather deeply into the roots.¹⁻⁷ The practice of extending these solid, inflexible, almost unbreakable metals far into the roots of teeth is occasionally complicated by root perforations and root fractures.⁷⁻¹² It has been shown that post preparations weaken the root structure,^{4,12,13} and that post preparation and cementation procedures create significant stresses within the root.¹⁴⁻¹⁶ Numerous studies dealing with alternatives to solid cast or stainless steel prefabricated posts have been reported in the literature.¹⁷⁻²⁵ These investigations have been prompted by a perceived alarming number of treatment failures related to the use of metal posts.

One of the alternatives to a metal post is a composite post and core. Stahl and O'Neal²⁶ reported restoring 36 anterior single-rooted teeth with post and cores composed entirely of Adaptic composite material, and covered with full crowns. After one year, 33 of these restorations remained intact. The three failures were caused by traumatic injuries. It is significant that no root fractures resulted from the trauma, and all three teeth were retained and subsequently successfully retreated.

More recently, Kenny and co-workers²⁵ reported a high rate of success in restoring primary teeth with short composite resin post and cores. Of 625 teeth restored, 17 failures were encountered within a period of three and a half years. The authors indicated that they have altered the post preparations to include an "inverted mushroom undercut". Subsequent to this design improvement, there have been no apparent failures associated

with normal occlusion.

It is premature to conclude that this technique, which is successful for primary teeth, will be equally successful for permanent teeth. Certainly, when the inherent risks of root perforations and root fractures associated with metal posts are contrasted against the benefits of increased safety, and potential for retreatment of composite post and cores, the latter bears some degree of investigation. An ideal material would withstand normal forces of occlusion but, under excessive forces, fracture before the root fractures. A composite material *may* be a more appropriate post restoration than a cast or stainless steel post, when considered from this perspective.

If the post preparation and the occlusal surface of the tooth are etched, the retention of a composite post and core complex might be enhanced. Goldman and co-workers^{27,28} have published two studies dealing with the effect of etching upon the retention of metal posts cemented with an unfilled composite resin. The etchant consisted of a 1 cc rinse of 17 per cent EDTA followed by a 1 cc rinse of 5 per cent NaOCl.^{27,28} Statistically significant increases in retention were found at 4 and 7 mm depths for the resin material. Significant increases in retention were not found for the zinc phosphate or the polycarboxylate samples.

These studies investigated the retentive properties of posts. There have been no published reports testing the effects of this mode of etching and cementation on the combined post and core systems. Nor have there been any published reports dealing with the retentive strength of post and cores fabricated entirely of composite

resin, in permanent anterior teeth.

The effect of etching the walls within post preparations was investigated in a preliminary study in the Department of Biomaterials at the Faculty of Dentistry, University of Toronto.²⁹ The results of this S.E.M. study indicated that a two-minute application of 17 per cent EDTA followed by rinsing with water and a two-minute application of 5 per cent NaOCl effectively removed the smear layer. Clean dentine and open dentinal tubules were found throughout the post preparation when this method of etching was used. The method described by Goldman and co-workers²⁷ was equally effective when 3 cc's of each solution was used. A 50 per cent solution of phosphoric acid liquid was almost as effective as the EDTA — NaOCl combination. A 37 per cent phosphoric acid gel did not effectively remove the smear layer. When the EDTA — NaOCl combination was used to etch the walls of the preparation and an unfilled resin was flowed into the post preparation, good penetration of resin into the dentinal tubules was observed under SEM.

Moderately good results were achieved when the unfilled resin was flowed into the canals and a filled resin immediately injected into the unset unfilled resin in the canal and packed with root canal pluggers. The best penetration was achieved when composite posts were premade, allowed to set, and then cemented into the post preparations with the unfilled resin. It appeared that some degree of hydraulic pressure within the post preparation enhanced the resin penetration into the dentinal tubules. Whether the etching and the use of a combination of unfilled

and filled resins would improve upon the retention of a post and core system is not known.

It was therefore the purpose of this study to investigate and compare the effect of etching upon the retention of post and cores fabricated entirely of composite, to post and cores constructed utilizing a metal post with a composite core.

Method and Materials

Sixty extracted anterior single-rooted teeth were used in this study. All teeth were stored in water and refrigerated at 5°C until restored and tested. The crowns of all teeth were severed at the cemento-enamel junction with a #557 crosscut taper fissure bur in a high speed handpiece with water coolant. The root canals were then instrumented and filled with gutta percha, procoseal sealer, and a combination of lateral condensation and thermal compaction. Post preparations were prepared to a depth of 5 mm with a No. 6 Para Post twist drill (diameter 0.06"). A slight bevel was cut at the occlusal orifice of the post preparation with a #6 round bur in the slow handpiece. The following three types of posts were used:

1. Prefabricated composite posts (PF). These were fabricated by mixing self-curing composite (Miradapt*) on a paper pad. The mixed composite was rolled with a spatula into a cylindrical shape. After setting, it was further shaped and trimmed with a #557 taper fissure bur and water coolant, to fit passively into the post preparation (Fig. 1).
2. No. 6 Para Posts.**
3. Mixed but unset, self-curing composite (Miradapt*) injected into the post

preparation with a C-R centrix syringe (C.M.). All posts extended 5 mm into the roots. The prefabricated composite posts and the Para Posts were trimmed so that they extended 3 mm above the occlusal surface.

In all samples, the cores were made by mixing self-curing composite (Miradapt*), and packing it into #2 copper bands. "Screw-eyes" were placed into one end of the composite-filled bands and the other end placed on the occlusal surface of the tooth. The copper band, composite, "screw-eye" and tooth were held together with moderate finger pressure for a minimum of five minutes. Once the composite had set, the excess was trimmed with a taper fissure bur and stored in cold water until tested. The "screw-eye" was required to attach the samples to the Instron testing machine (Fig. 2).

One half of the samples were etched as follows:

The post preparation and occlusal surfaces were flooded with 17 per cent EDTA for two minutes. All etchants were applied with a brush. The EDTA was flushed away under a 15-second stream of water. The post preparation and occlusal surface were then flooded with a 5 per cent solution of NaOCl for two minutes. This also was flushed away with a copious 15-second stream of water. The samples were then dried with 30 seconds of forced air from an air-water syringe.

The post and core restorations were divided into three groups of 20 as follows:

- Group 1.** Prefabricated composite posts and cores (PF). The post preparations were flooded with a self curing, mixed, unfilled resin (Delton Pit and Fissure Sealant***) with a composite brush. The solid prefabricated composite posts were coated in the mixed unfilled resin and placed into the post preparations. They were held under moderate finger pressure until the unfilled resin had set. A copper band filled with another mix of filled resin (Miradapt), with a "screw-eye" in place, was placed over the protruding portion of post and onto the occlusal surface of the tooth. This was held in place

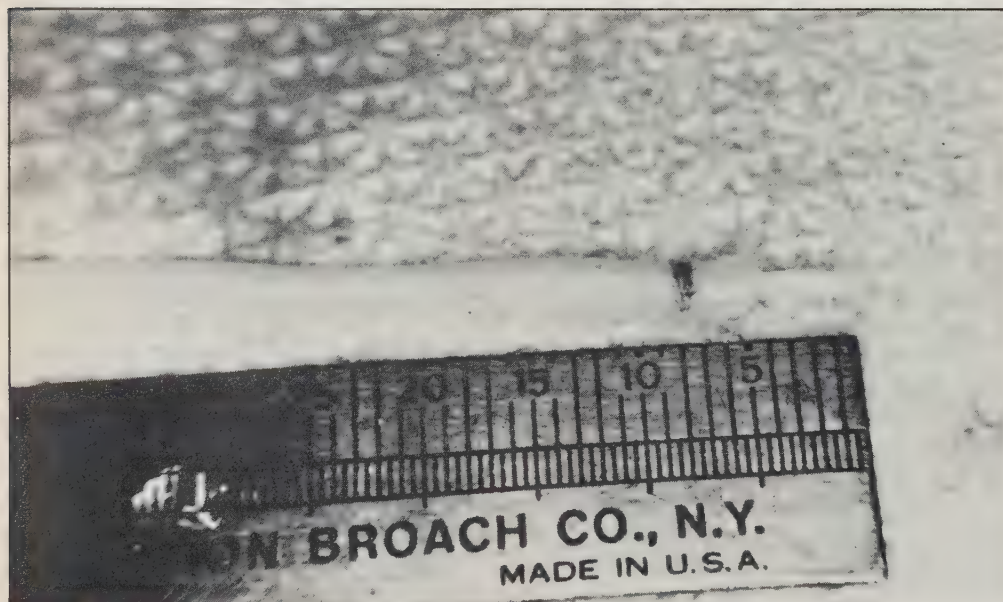


Fig. 1. Prefabricated composite post, partially trimmed and measured with pencil mark at 8 mm total length.

* Johnson and Johnson Dental Products, Montreal, P.Q.

** Para Post P-71-6, 0.06" (1.5 mm) diameter, Whaledent International, 236 Fifth Avenue, New York, NY.

*** Johnson and Johnson Dental Products, Montreal, PQ.

under moderate finger pressure until set (five minutes).

Group 2. No. 6 Para Posts.

The canals were flooded with mixed unfilled resin (Delton) as in group 1. The posts were coated with more of the mixed unfilled resin and then placed into the canals. The posts were held in place with moderate finger pressure until the resin had set. The cores were fabricated and placed as in group 1.

Group 3. Injected composite posts (CM).

Unfilled resin (Delton) was flooded into the post preparations as in groups 1 and 2. Mixed, but unset filled resin (Miradapt) was injected into the, as yet, unset mixture of unfilled resin, with a C-R centrix syringe. Considerable overflow of both resins was left on the occlusal portion of the tooth (a mound of resin approximately 2-3 mm in height). This was immediately covered with a copper band filled with more of the filled resin (Miradapt) and the screw-eye. The copper band was held

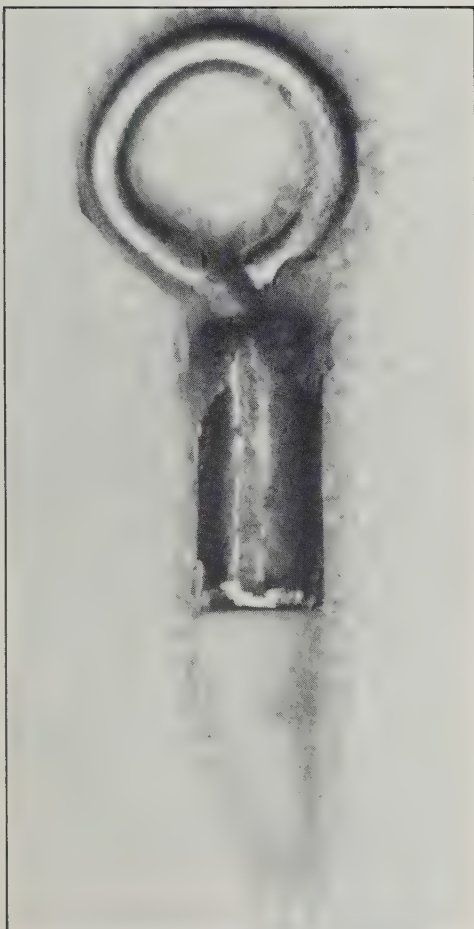


Fig. 2. Sample with post and core restoration covered with a #2 copper band and "screw-eye" for attachment to the Instron testing machine.

under moderate finger pressure until set (five minutes).

In one half of the samples of each group, the post preparations and occlusal surfaces were etched prior to placement of the composites. The other half remained unetched. All samples were placed in acrylic blocks (**Fig. 3**), stored in water, and refrigerated until tested. All samples were at room temperature when tested.

All samples were placed in an Instron testing machine and subjected to tensile forces at a cross-head speed of .01 cm/min until dislodgement or fracture occurred. The force required to dislodge or fracture each sample was recorded and the data analysed with a two-way Anova and the Bonferroni modified t-test.

Results

Of the 60 samples, 10 were defective; of the remaining 50, only one post was removed during the testing. This was a Para Post cemented with unfilled resin into a unetched preparation. In all other samples the core material separated from the post at the occlusal surface of the tooth. The posts remained in the roots (**Fig. 4**). Where Para Posts were used, the core material separated from the post as well as from the tooth, leaving the Para Post projecting 3 mm out of the root.

The mean values of the forces of fracture are listed in **Table I**. In each group, the etched samples were more resistant to fracture than the unetched; however, it was only in the Para Post samples that the differences were statistically significant. The results of the statistical analysis are shown in **Tables II and III**.

Regardless of etching, the Para Post groups were significantly more resistant to fracture than all other groups. The



Fig. 3. Samples mounted in acrylic blocks, ready for testing.

etched Para Post groups were significantly more resistant to fracture than all other groups.

Discussion

It was the intent of this study to test the retentive strength of three groups of post and core systems; this is not what transpired. In 49 of the 50 samples ultimately tested, the posts remained within the roots. The cores fractured at the occlusal surfaces of the teeth. It was, therefore,

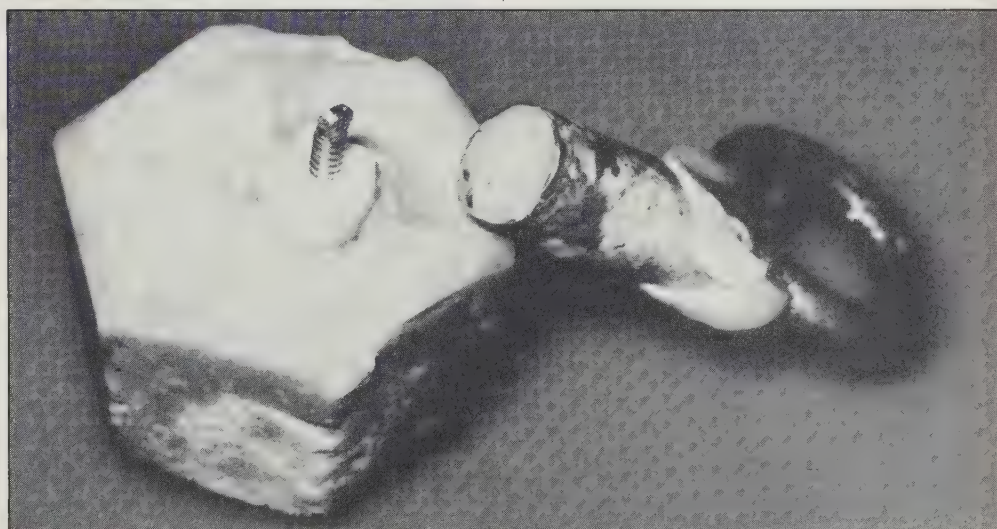


Fig. 4. Fractured samples after subjecting them to tensile forces, showing Para Post remaining in the root. The composite core has separated from the post and the occlusal surface of the tooth.

TABLE I

Mean values of forces of fracture in Kg.

	P.P.	P.F.	C.M.
Etched	23.41	5.25	6.16
Not etched	14.89	2.74	5.03

P.P. = Para Posts + Cores
P.F. = Preformed Composite Posts + Cores
C.M. = Injected Composite Posts + Cores

the strength of the post and core system, in combination with its adherence to the occlusal surface of the tooth that was tested. The Para Post samples were significantly more resistant to fracture than the composite-only samples. It is interesting to note that only in the Para Post samples with the composite core, did the etching significantly increase resistance to fracture. There was no statistically significant difference in the composite-only samples. An SEM examination of the fracture site on the occlusal tooth surface, in two samples, revealed that on approximately one-half of the surface, resin tags remained in the dentinal tubules. From this it may be speculated that at least a part of fracture was within the composite material. That is, the composite material did not separate cleanly and completely from tooth structure, pulling the resin tags out of the dentinal tubules. Instead, at least a portion of the fracture occurred within the composite material itself, leaving the remaining resin attached to the tooth surface.

Therefore, it would appear that at least part of the weakness in these post and core systems is within the composite material itself. Considering that the Para Posts significantly increased resistance to fracture, it may be deduced that they served to reinforce the composite material.

This finding has some clinical implica-

tions. In severely mutilated anterior single-rooted teeth in which all of the coronal portion of the tooth is missing, a solid metal post, such as a Para Post, would strengthen the post and core system. However, if a significant portion of crown remains intact after endodontic treatment, a solid post may not necessarily increase resistance to fracture.^{9,11-13,30} When the potential for root perforations and root fractures associated with solid posts is weighed against the benefits of their reinforcing qualities and associated increased core retention, a clinical dilemma arises. In some situations where a considerable amount of coronal structure remains, a solid post and core may be more harmful than helpful. In other cases in which all of the coronal structure is missing, a solid post may be indispensable for retention of the core.

There is no question that the "reinforcement" of the composite material by Para Posts was enhanced with etching. Therefore, in those clinical situations in which retention and strength of the core are serious considerations, etching the post preparation and occlusal surface of the tooth followed by cementation of a solid post with an unfilled resin may be useful treatment consideration.

Conclusion

Tensile forces were applied to three types of post and core systems. The post was

TABLE III

Comparison of etching to no etching within each group

ETCHED VS NOT ETCHED	
C.M. vs C.M.	no significance
P.F. vs P.F.	no significance
P.P. vs P.P.	p .0004

P.P. = Para Posts + Cores
P.F. = Preformed Composite Posts + Cores
C.M. = Injected Composite Posts + Cores

TABLE II

Comparison of p values of Para Posts, Prefabricated Composite Posts, and Injected Composite Posts

	P.P. vs P.F.	P.P. vs C.M.	P.F. vs C.M.
Etched	p .001	p .0001	no significance
Not etched	p .0001	p .0003	no significance

P.P. = Para Posts + Cores
P.F. = Preformed Composite Posts + Cores
C.M. = Injected Composite Posts + Cores
Forces measured in Kilograms

removed from the root in only one out of 50 samples. The remaining 49 samples separated at the occlusal surfaces of the teeth, leaving the posts in the roots. Under the conditions of this study, Para Posts cemented into etched canals, using an unfilled resin as the cement, were the most resistant to fracture. Δ

This research was supported by a grant from the Dean's Fund for Dental Research, Faculty of Dentistry, University of Toronto.

The authors wish to thank Ms. Branka Maric and Mr. Robert Chernecky for their competent technical assistance in this project.

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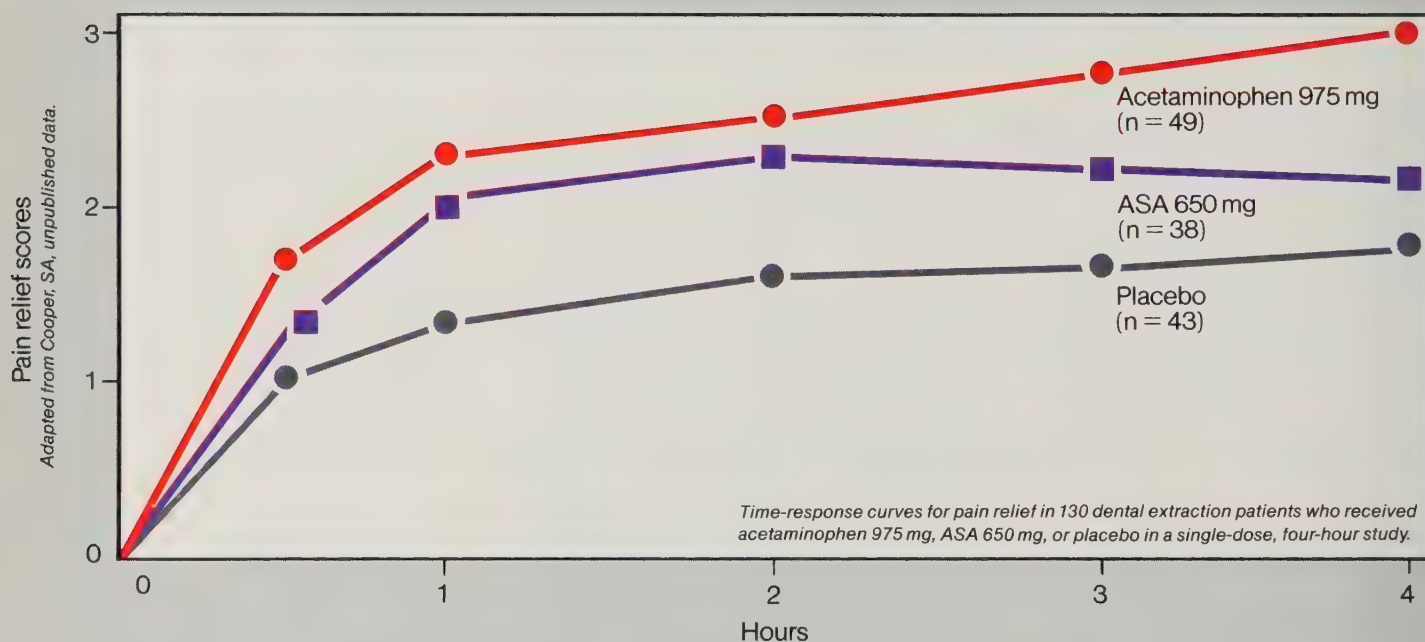
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PSYCHIATRIC REFERRAL

for craniomandibular pain patients

Gerard L. Lapeer, DDS
Kingston, Ont.

ABSTRACT

The underlying process for the development and perpetuation of a chronic pain state is still unclear. This creates a perplexing problem for dentists dealing with chronic craniomandibular pain problems. This article outlines the diagnostic criteria used in our clinic to identify craniomandibular patients requiring psychiatric consultation and describes the management of the psychiatric referral.

SOMMAIRE

On ne comprend pas encore très bien comment se développe une douleur chronique. Aussi ce phénomène rend-il perplexes les dentistes qui ont à traiter des douleurs cranio-mandibulaires chroniques. Dans cet article, nous exposons les critères diagnostiques que nous utilisons pour identifier les patients qui auraient besoin de consulter un psychiatre et nous indiquons comment nous gérons ces cas.

Introduction

As dentists become increasingly involved in treating patients with pain of the craniomandibular complex, the possibility of some of these individuals requiring psychiatric consultation becomes a certainty. This particular type of referral is not only dependent upon diagnosis, but is also influenced by the dentist's and/or patient's attitude towards psychiatric intervention. The purpose of this article is to outline the diagnostic criteria used for the identifica-

tion of patients requiring psychiatric consultation, and to describe the management and mechanics of the psychiatric referral.

Psychiatric consultation — the diagnostic criteria

In our office we have established some guidelines for determining if a psychiatric consultation for a craniomandibular pain patient is warranted. The following criteria are used:

- (1) Pain has started with an illness, injury or emotional crisis, and at the time of consultation has been present for six months or longer with very little, if any, organic disturbance to explain its persistence.¹
- (2) The patient demonstrates an urgency about his/her painful condition which is inconsistent with the clinical findings, denies that there are any other problems, and insists that if the unbearable pain could be stopped, everything would be solved.¹
- (3) The patient insists that there is definite organic cause underlying his/her painful condition and demands medication and/or surgery to alleviate the problem.¹
- (4) The pain has resulted in numerous investigations and referrals (dental, medical and/or surgical), with one therapeutic failure after another.¹
- (5) The patient is taking analgesics (anti-inflammatories and/or narcotics), tranquilizers and/or antidepressants on a regular basis to control the pain, with little, if any, relief and habituation and/or addiction is a possibility.^{1,2}
- (6) The patient demands narcotic analgesics and/or tranquilizers to control the

pain, and refuses or insists on putting off other more appropriate treatment alternatives due to his/her life circumstances at the time.^{1,2}

(7) The patient demonstrates an unusual rejection of all medicinal intervention or claims to have numerous drug allergies.²

(8) The patient's family history demonstrates that other family members have chronic pain problems or there is a history of abusive behaviour.^{1,2}

(9) The patient is seeking emotional compensation by maintaining a chronic pain state.¹

(10) The patient is seeking monetary compensation by maintaining a chronic pain state.²

(11) The patient exhibits bizarre and/or delusional beliefs about his or her pain.³

(12) The patient's reports of previous therapies and consultations are distorted.³

(13) The patient is depressed and/or suicidal.³

Psychiatric consultation — management and mechanics

The referral process for psychiatric consultation as outlined below is designed to help the dentist avoid problems and stress which can arise when he or she has diagnosed the need for psychiatric intervention for a particular pain patient. These general guidelines may require alteration to accommodate specific clinical situations.

As with any treatment protocol, all contingencies should, if possible, be accounted for and discussed with the patient before beginning craniomandibular therapy. In our office, patients who are referred for the diagnosis and man-

agement of craniomandibular disorders receive both verbal and written information. This includes the idea that during treatment we may require the conjunctive utilization of other health care specialists. The patient is given examples of the different specialists we may employ, including physiotherapists, psychologists and psychiatrists, along with a brief explanation of why the expertise of each may be required. In this way, the possibility of a psychiatric referral is introduced to the patient before treatment. At this stage, psychiatry should receive the same emphasis as any other possible therapeutic intervention.

The necessity for psychiatric consultation may become evident during the preliminary examination, during the early stages of treatment, or well into therapy; but, once it has been established that the patient requires psychiatric intervention, the first course of action, as with any treatment decision, is to discuss the proposed referral with the patient.

The outcome of this dentist-patient encounter is dependent on two specific catalysts — the patient's and the dentist's attitudes towards psychiatry. Patients who are considered for psychiatric consultation may have beliefs which are antagonistic to achieving a successful referral. Some patients will emphatically deny the possibility of an underlying emotional or psychological cause for their pain and, therefore, reject the idea of psychiatric intervention. Others may feel threatened by the suggestion of seeing a psychiatrist because they believe that psychiatry is harmful and could affect them in a deleterious way. They may be fearful about how they would be viewed by their family, friends and/or co-workers if it became known that they were receiving or had received psychiatric therapy. Still other patients have a strong pre-judice against psychiatrists because they believe that psychiatrists only treat "crazy" people, and they are not "crazy". Finally, some patients interpret the suggestion of a psychiatric referral as a rejection by the dentist of their problem.

The dentist may also have attitudes which antagonize the psychiatric referral process, and he may believe that psychiatry is a depository for difficult, hysterical and/or "nutty" patients; that by unloading these difficult cases onto a psychiatrist, he would be free to treat patients who could be helped. Other dentists may not accept psychiatry as a legitimate treatment alternative, either because they view psychiatry as a useless therapeutic avenue or because they insist that dentists have the only clinical solu-

tion to the craniomandibular pain problem. By having a negative attitude towards a psychiatric referral, the dentist may deprive patients of a legitimate treatment alternative that is essential for resolution of their pain.

To achieve the successful referral of a patient for psychiatric consultation, the dentist must develop skills and knowledge which are conducive to handling this particular clinical situation.

(1) The dentist who treats craniomandibular patients must have a good working knowledge of the differential diagnosis of chronic pain, the problems associated with chronic pain patients and the possible treatment alternatives which are appropriate for these patients.

(2) The dentist must be knowledgeable about the various psychiatric alternatives available for handling patients with chronic pain.

(3) The dentist must have a reliable psychiatric service to which to refer patients. The psychiatrist should be familiar with the dentist's approach to handling pain patients and be willing to work in association with the dentist in treating the pain patient so that the patient receives consistency in therapy or a gradual transition from one therapist to the other.

(4) It is important that the dentist have a positive attitude towards the psychiatric referral. In discussions about the proposed referral, the dentist can provide accurate information to the patient and the patient can reveal his or her attitudes about psychiatry. The dentist will encounter a variety of responses to the proposal of psychiatric intervention.

These may be loosely categorized into five groups: those who will accept the opportunity for psychiatric assessment; those who suspect that they have an underlying emotional or psychiatric problem and will accept psychiatric intervention once this suspicion has been confirmed by the dentist;³ those who are uncertain about a psychiatric referral, but will consider it after a thorough dental evaluation;³ those with firm beliefs who fear psychiatric treatment but feel that their circumstances are out of control, and who can be redirected with patience and trust towards psychiatric intervention;³ and finally, those with fixed beliefs. Classifying patients into one of these groups and then tailoring the discussion of the psychiatric referral to a particular patient type is not as important as being honest and objective with the patient. As stated by Blasberg, Renick and Miles:³ "When a patient appreciates that a recommendation stems from an honest appraisal of what would be of

greatest value, he or she is likely to give it serious consideration". If a psychiatric referral is considered by the dentist to be essential in the successful treatment of the craniomandibular problem and the patient refuses to see a psychiatrist, then the patient must be considered non-compliant. Continued monitoring may be suggested but the patient must be made to understand that active treatment is at a standstill unless the psychiatric assessment is undertaken.

(5) The patient may interpret the psychiatric referral as rejection by the dentist or as a sign that the pain problem is not treatable. It must be clearly emphasized to the patient, and this cannot be stressed enough, that the psychiatric referral is not meant to terminate the dentist-patient relationship, but that it is an essential element in the diagnosis and possible management of the pain problem.

The dental auxiliary staff play an important role in the management of the psychiatric referral. They must be knowledgeable about the function of the psychiatrist in treating chronic pain patients and they must reinforce the dentist's attitudes and approach to the psychiatric consultation. The patient must not be confused by conflicting information or contradictory attitudes.

Once the patient has agreed to a psychiatric consultation, the appointment should be arranged as soon as possible. Our policy is to make the appointment by phone while the patient is in our clinic. This solves a number of problems. First, the importance of the psychiatric appointment is again reinforced. Second, the dentist can be certain that the patient will see a psychiatrist who is interested and knowledgeable about chronic pain and who is familiar with the dentist's approach to treating these patients. Third, the dentist does not have to rely on the patient's compliance for making an appointment. And fourth, it has been our experience that some family physicians have been reluctant to refer their patients for psychiatric consultation if the primary complaint is pain.

After making the appointment for the psychiatric referral and before the patient leaves the office, it is critical to make a return appointment for the patient. This demonstrates that you are still interested in treating their pain problem and that the psychiatric referral is not a "slough off". The dentist must continue to see the patient to ensure the continuity of care.

Conclusion

Since the underlying process for the development and perpetuation of a

chronic pain state is still unclear,¹ a perplexing problem is created for dentists dealing with chronic craniomandibular pain problems. An essential component in the treatment of many, if not all, chronic pain patients may be a psychiatric assessment. This article has outlined the diagnostic criteria which we use in our office to identify craniomandibular patients who might benefit from psychiatric consultation and the management methods used to facilitate the psychiatric referral. When a thorough review of the case leads the dentist to consider a psychiatric referral, it is important to guide patients toward accepting a psychiatric assessment with a clear understanding of the role of psychiatry in treating chronic pain, coupled with a genuine appreciation for the patients' beliefs. Δ

Dr. Lapeer is in the staff of the Department of Dental Surgery, St. Mary's of the Lake Hospital, P.O. Box 3600, Kingston, Ont. K7L 5A2.

Reprint requests to Dr. Lapeer.

References

1. Lapeer, Gerard L. Craniomandibular algopathia — benign chronic pain of the craniomandibular apparatus. *J Canad Dent Assoc* 53:123-128, 1987.
2. Marciani, Robert D., Haley, John V., Moody, Philip M. *et al.* Identification of patients at risk for unnecessary or excessive TMJ surgery. *Oral Surg* 64:533-535, 1987.
3. Blasberg, Bruce, Renick, Ronald A. and Miles, James E. The psychiatric referral in dentistry: Indications and mechanics. *Oral Surg* 56:368-371, 1983.



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Announcements

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May 1-3: 9th International Dental Meeting in Nice, France. For more information, contact: Mrs. Schmitt, 37, av Villermont, 06000 Nice, France. Tel: (33) 93 98 26 09.

May 3-7: American Association of Endodontists in New Orleans. Contact: Ms. Irma S. Kudo, 211 E Chicago Ave, Suite 1501, Chicago, ILL 60611, USA.

May 6-9: Practical Dentistry: A Look Into the 90's 119th Annual Session of the Wisconsin Dental Association. For registration information, please write or call: Wisconsin Dental Association, 633 W Wisconsin Ave, Milwaukee, WI 53203, (414) 276-4520.

May 7-12: Academy of Denture Prosthetics in Corpus Christi. Information: Dr. Charles C. Swoope, 1515 116th Ave NE, Suite 303, Bellvue, WA 98004, USA.

May 8-12: American Academy of Cosmetic Dentistry in St. Thomas, VI. Contact: Ms. Barbara Joe Zoeller, 2709 Marshall Ct, Madison, WI 53705, USA.

May 12-14: Academy of Dentistry for the Handicapped, American Society for Geriatric Dentistry, American Society of Hospital Dentists in Chicago. For information, contact: Dr. Paul Van Ostenberg, 211 E Chicago Ave, Suite 1616, Chicago, ILL 60611 USA.

May 13: Update on the Management of Periodontitis sponsored by the Alberta Academy of Periodontics in Calgary, Alberta. Contact: Alberta Academy of Periodontology, 1333-8th St S.W., Suite 505, Calgary, Alberta T2R 1M6.

May 16-20: 65th Congress of the European Orthodontic Society in Würzburg, West Germany. For details, contact: Prof. Dr. Emil Witt, Universitätszahnklinik, Pleicherwall 2, D-8700 Würzburg, West Germany.

May 21-26: 10th International Conference on Oral and Maxillofacial Surgery in Jerusalem. Contact: Dr. Eli Ronen, Chairman, Organizing Committee, 10th International Conference on Oral and Maxillofacial Surgery, PO Box 5006, Tel Aviv 61500, Israel.

May 24-27: Swiss Dental Association Convention in Switzerland. Contact: Dr. Pierre Spahn, 51, av du Casino, 1820 Montreux, Switzerland.

May 27-30: American Academy of Pediatric Dentistry in Orlando, Florida. Details: Dr. John A. Bogert, 211 E Chicago Ave, Suite 1036, Chicago, ILL 60611, USA.

May 28-June 1: Les journées dentaires du Québec 1989 at the Montréal Convention Centre. For information, please contact: Chantal Bally, ODQ, 625 René-Levesque West, 5th Floor, Montréal (Qué) H3B 1R2. (514) 875-8511.

May 29-June 2: Periodontal and Prosthetic Treatment in Advanced Cases in Malmo, Sweden. For details, contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June/Juin 1989

June 1-3: 2nd International Symposium on Osseointegrated Dental Implants in Philadelphia, PA. For registration information, contact: University of Pennsylvania, Continuing Dental Education, 4001 Spruce St, Philadelphia, PA 19104 USA.

June 1-4: Annual Meeting of the Canadian Association of Dental Consultants in Toronto, Ontario. Contact: Dr. Ronald G. Weiler, 535 Park St, Suite 3, Kitchener, Ont N2G 1N8.

June 1-5: 12th Congress International Association of Dentistry for Children in Athens, Greece. For details, contact: Secretariat, 12th Congress IADC, 41, Skoufa Str, Athens 106 73, Greece.

June 4-9: V International Conference on AIDS in Montréal, Québec. For more information, write to: V International Conference on AIDS, Secretariat, Kenness Canada Inc, 1010, rue Ste-Catherine ouest, bureau 628, Montréal (Québec) H3B 1G7.

June 5-9: XXV Congreso nacional y V International de Odontología y Estomatología in Malaga, Spain. For information, contact: SITECC-SIASA, c/o Manuel

del Palacio, 16, Edif. Costa Bella, Apto. 3, 29017 MALAGA, Spain. Tel: 29 29 20 - 29 41 43.

June 5-9: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmo, Sweden. Contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June 7-14: American Dental Hygienists' Association in Boston. Contact: Ms. Kathy Gallagher, 444 N Michigan Ave, Suite 3400, Chicago, ILL 60611, USA.

June 8-11: Alberta Dental Association Convention in Red Deer, Alberta at the Capri Centre. Theme "Unity in Dentistry". Registration: Dr. Barry Fleming, Highland Green Shopping Centre, 6315 Horn St, Red Deer T4N 6H5 Tel: (403) 346-8443.

June 10-16: ACFD/CADR Biennial Conference on Dental Education & Research in London, Ontario. For further information, contact: Mrs. Stella Taylor, Executive Assistant, ACFD, #109 - 1815 Alta Vista Dr, Ottawa, Ont K1G 3Y6. (613) 738-7732.

June 19-23: 14th International Congress of Gerontology in Acapulco, Mexico. For details, contact: Congress Secretariat, Jojutla No. 91, Tlalpan CP 14090, Mexico D.F., Mexico.

June 26-30: XII Congreso de la Federación odontológica latinoamericana y XI Congreso nacional de Estomatología in Havana, Cuba. Contact: International Conference Center, Apartado 16046, Zona 16, Havana, Cuba. Tel: 20-4653.

June 27-30: 95th Annual Meeting of the American Dental Society of Europe in Deauville, France. Details: Dr. Clive R. Debenham, 1 Harley St, London W1N 1DA, England. 01.580 2294.

June 28-30: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Wilma E. Motley, 18952 Blackhawk St, Northridge, CA 91326, USA.

June 28-July 1: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Mrs. D. Scanlon, 53 Ariel Crt, Nepean, Ont K2H 3J1. (613) 728-8730.

June 28-July 1: International Association of Dental Research & International Conference on Oral Biology in Dublin, Ireland. For information, contact: Ms. Eloise Bredder, Administrative Assistant, American Association of Dental Research, 1111 - 14th St NW, Suite 100, Washington, DC 20005 USA.

June 28-July 5: Bermuda Dental Association Convention. Limited attendance convention. Contact: Dr. Bob Brandon, 85 Lonsdale Dr, London, Ont N6G 1T4. (519) 657-3368.

June 30-July 2: Dentistry 89 in Oxford, England. For details, contact: Linda Bridges, Conference Office, British Dental Association, 64 Wimpole St, London W1M 8AL. Tel: 01-935 0875.

June 30-July 2: Florida National Dental Congress in Orlando, Florida. For information: Florida National Dental Congress, 3021 Swann Ave, Tampa, FL 33609, USA.

July/Juillet 1989

July 14-19: Academy of General Dentistry in New York. Contact: Ms. Debbie Jepsen, 211 E Chicago Ave, Suite 1200 Chicago, ILL 60611, USA.

August/Août 1989

August 9-13: Dental Manufacturers of America, Inc. Contact: Ms Kathleen A. LeMar, 1118 Land Title Bldg, Philadelphia, PA 19110, USA.

August 10-13: American Academy of Esthetic Dentistry in Pebble Beach, CA. Contact: Ms. Cheryl Kraus, 211 Chicago Ave, Suite 948, Chicago, ILL 60611, USA.

August 18-20: 5th Annual Symposium, ACOI: Implant Surgery and Prosthodontics in Oakland, California. Information: Margaret M. Jackson, International Congress of Oral Implantologists, PO Box 2277, Grand Central Station, New York, NY 10163, USA. (201) 783-6300.

August 21-25: 18th North Queensland Dental Convention in Cairns, Australia. For details, contact:

Dr. Peter Martin, Director, 18th North Queensland Dental Convention, PO Box 388, Cairns 4870, Australia.

August 26-30: 25th Class Reunion University of Manitoba Class of '64 in Vancouver during CDA Convention. Contact: Dr. Ken Neuman (604) 736-7371.

August 27-30: Canadian Dental Association Convention in Vancouver, British Columbia. For more information, contact: Miss Leila Chatterjee, Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6 Tel: (613) 523-1770.

August 28-30: International Conference on Blood-borne Infections in the Workplace in Stockholm, Sweden. Sponsored by WHO, ILO and NIH (USA). Abstracts invited - deadline March 31. Contact: CONGREX AB, PO Box 5619, S-114 86 Stockholm, Sweden, ATTN: Catharina Oström.

September/Septembre 1989

September: New Zealand Dental Association Convention in Napier, New Zealand. Contact: Dr. DG Arnott, 30 Munro St, Napier, New Zealand.

September: 27th Annual Convention of Iranian Dental Association and 7th International Dental Exhibition in Tehran. Contact: Dr. Ezatollah Khamessi, Iranian Dental Association International Section, PO Box 14155-3695, IR-Tehran 14, Iran.

September 2-8: 77th Annual World Dental Congress, FDI, in Amsterdam, The Netherlands. Congress Secretariat, c/o Organisatie Bureau Amsterdam bv, Europaplein 12, 1078 GZ Amsterdam, The Netherlands. (31) 20-5491212.

September 21-23: 41st Annual New Orleans Dental Conference What's Cookin' in '89. For more information, call or write: Ms. Norma Ward, New Orleans Dental Conference, Suite 119, 3101 W. Napoleon Ave, Metairie, LA 70001, USA. (504) 834-6449.

October/Octobre 1989

October 5-8: IX National Dental Congress of Asocia-cion Odontologica Dominicana in Santo Domingo. Contact: IX Congreso Nacional de Odontologica, Apartado Postal 1002, Santo Domingo, Dominican Republic.

October 11-15: American Academy of Implant Dentistry in Scottsdale. Contact: Mr. John P. Winiewicz, PO Box 2002, Abington, MA 02351, USA.

October 24-27: American College of Prosthodontists in Tuscon. Contact: Ms. Linda Wallenborn, 1777 NE Loop 410, Suite 904, San Antonio, TX 78217, USA.

October 24-27: 3rd International Medical, Hospital and Dental Equipment and Facilities Exhibition in Bangkok, Thailand. Contact: Elsa Wong, SHK International Services Ltd, 22/f National Mutual Centre, 151 Gloucester Rd, Hong Kong, 89587 SHKIS HX.

October 25-28: American Academy of Periodontology in Washington, DC. Contact: Ms. Jean Pierson, 211 Chicago Ave, Suite 1400, Chicago, ILL 60611, USA.

October 27-28: International Congress for Oral Implantologists in New York. Contact: Ms. Margaret Jackson, 248 Lorraine Ave, 3rd floor, Upper Montclair, NJ 07043, USA.

October 27-31: American Institute of Oral Biology in Palm Springs. Contact: Dr. Philip Boyne, Dept of Surgery, School of Dentistry, Room 3306, 24777 University St, Loma Linda, CA 92350, USA.

October 30-November 1: American Academy of Maxillofacial Prosthetics in Tuscon. Contact: Dr. Gregory Parr, MCG/School of Dentistry, Dept of Prosthodontics, August, GA 30912, USA.

October 30-November 3: American Dental Trade Association in Maui, Hawaii. Contact: Mr. Nikolaj Petrovic, ADAT, 4222 King St, Alexandria, VA 22302, USA.

October 30-November 3: 107th Annual Meeting of the American Dental Trade Association in Maui, Hawaii. Contact: Nikolaj M. Petrovic, CAE President & Chief Executive Officer, American Dental Trade Association, 4222 King St, Alexandria, VA 22303 USA.

October 30–November 5: International College of Dentists in Honolulu, Hawaii. Contact: Dr. Richard Schaffer, One Metro, 51 Munroe St, Suite 1501, Rockville, MD 20850, USA.

November/Novembre 1989

November 1-3: 52nd Annual Meeting of the American Association of Public Health Dentistry in Honolulu, Hawaii. Contact: AAPHD, National Office, 10619 Jousting Lane, Richmond, VA 23235, USA.

November 3: American Association of Dental Consultants in Honolulu, Hawaii. Contact: Dr. Alan Helerstein, 919 Deer Park Ave, North Babylon, NY 11703, USA.

November 3: American Endodontic Society in Honolulu, Hawaii. Contact: Dr. Alvin H. Arzin, 2 Learning Lane, Levittown, PA 19054, USA.

November 4-7: 130th Annual Session of the American Dental Association in Honolulu, Hawaii. Contact: Office of International Affairs, American Dental Association, 211 E Chicago Ave, Chicago 60611 USA.

November 5-8: American Academy of Dental Radiology Contact: Capt. Tom McDavid, OASD Health Affairs, Pentagon Room 3D372, Washington, DC 20301-1200, USA.

November 8-12: American Society of Dentistry for Children in San Diego, CA. Contact: Ms. Carol A. Teuscher, 211 E Chicago Ave, Suite 1430, Chicago, Ill 60611, USA.

November 15-18: VI Congreso Internacional de Estomatología y X Congreso Nacional de Odontología in Lima, Peru. Contact: Dr. Ramon Castillo, President de los Congresos, Alfredo Salazar 583, Of. 102, San Isidro, Lima, Peru.

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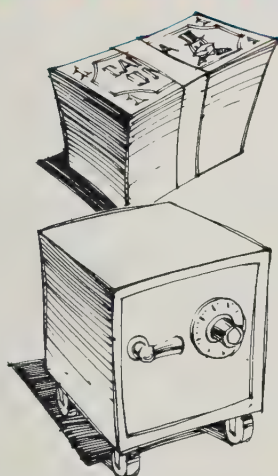
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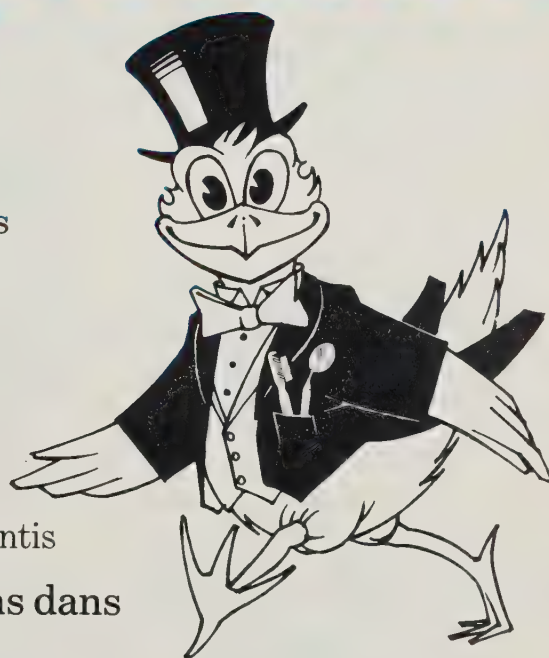
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CDSPI IS A CANADIAN NON-PROFIT CORPORATION DEDICATED TO THE ONGOING PROVISION OF QUALITY SERVICES TO THE DENTAL PROFESSION ON BEHALF OF ORGANIZED DENTISTRY

Offices and Practices

NORTHWEST TERRITORIES—Yellowknife: General dental practice established ten years for sale. Refurbished '85. P.O. Box 2615, Yellowknife, NWT X1A 2P9, (403) 873-8505 (W) or 920-2577 (H).

BRITISH COLUMBIA: PRACTICE FOR SALE. Established, 8-year-old quality practice located in Vancouver's west end fashion district. Three full operatories, with excellent staff and hygiene recall system. Steady new patient flow, with 95 per cent insured. Good gross with opportunity for growth. Please call Dr. Kary Taylor at (604) 687-8319 or write to 509 - 1270 Robson St, Vancouver, BC V6E 6Z3.

BRITISH COLUMBIA: 12-year-old, well-established general practice for sale. Located on outskirts of Vancouver Chinatown. Corner of ground floor. High visibility. 700 sq. ft. Two operatories. Phone (604) 270-1160, office hours.

BRITISH COLUMBIA—Fraser Valley: Dynamic, established family practice for sale in Clearbrook, the sixth fastest growing community in Canada. One hour from Vancouver. 38 new patients per month, 1341 sq ft, 3 chairs, 4th op plumbed, congenial staff of six, computerized billing and accounts receivable system. Owner will assist with smooth transition. Contact Dr. M. Corlett: days (604) 854-3130 or evenings (604) 852-3073.

BRITISH COLUMBIA—Kootenays: Must sell. High quality, general family practice established 11 years. Solid patient base with very active recall program. Good gross with low overhead. The area offers outstanding recreation, education and family living. Reply to CDA Box 2421.

BRITISH COLUMBIA—Parksville (Vancouver Island): Established 12-year-old general practice has me working more hours than I wish, for more income than I require — Time to retire and enjoy this wonderful area more fully. Make my day — and yours. For details (604) 468-7736 evenings.

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busy — good annual gross. Call (604) 224-9100 evenings. Won't last. \$10,000 (refundable) certified deposit required to view.

BRITISH COLUMBIA—Vancouver: New dental facility in shopping mall/office complex. Benefit of a restrictive covenant. New university campus catering to business people. High concentration of office buildings in area. The facility includes some dental equipment and leaseholds, but no patient charts. (604) 669-7467 or evenings 266-4986.

BRITISH COLUMBIA—Vancouver Lower Mainland: Busy mall location, 6 operatories, 2 fully-equipped. In 1200 sq ft office. New leasehold and equipment, low rent and long-term lease. Phone (604) 521-1454 evenings.

BRITISH COLUMBIA—Victoria: Purchase or partnership for well-established, high-quality general practice with good recall program. Modern, well-equipped three operatories. Located in professional building adjacent two major shopping centres. Good growth potential. Dr. John Q. Fraser, 3909 Sandell Place, Victoria, BC V8N 5R4, (604) 721-0091 (evenings).

ALBERTA: Quality rural practice for sale in the beautiful heart of lakeland, North-eastern Alberta. Long established, owner wishes to retire and enjoy. Three operatories, two fully-equipped, third (prosthetic) room partially equipped. Hospital privileges. Dental equipment (mine) in hospital O.R. Private office & staff room. All rooms have generous space. Shared administration with other dentist. Cost \$45,000. \$15,000 down, owner will carry balance at prime + 1 per cent. Business (403) 645-4495. Home (403) 645-2584.

ALBERTA—Brooks: Practice available immediately. Dentist retired but owns building. Four operatories. Some older equipment. Terms negotiable. Contact: Dr. C.T. McCune, PO Box 250, Brooks, ALTA T0S 0J0, phone (403) 362-2657.

ALBERTA—Calgary: Established dental practice for sale in modern, downtown professional building. Two well-equipped operatories utilized by 2 practitioners with high income and low overhead. Combined endodontic practice with a good referral base. Both practitioners are retiring and leaving the city, however will

ensure a smooth transition. Respond to CDA Box 2436.

ALBERTA—Calgary: Retail dental office for sale in enclosed mall with great walk-by traffic. Office opened in August 88 and has shown excellent productivity. Please call Dr. Bob Ronaghan or Dr. Phil Louie at (403) 235-3888.

ALBERTA—Lethbridge: For Sale: Lucrative, well-established general practice. Modern, well-equipped operatories. Excellent opportunity for two new graduates. Owner will assist with transition. Reply in confidence to CDA Box 2447.

ALBERTA—Rocky Mountain House: For sale. Long-established, active, solo family practice. Main street, ground floor location. Three operatories, one newly-equipped. Located in growing, progressive community within easy access to both major cities. Outstanding recreational opportunities in the area. Professional appraisal available. Owner retiring. Contact (403) 845-3133 office or (403) 845-3455 home.

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ONTARIO: PERIODONTIST OR ENDO-DONTIST WANTED. To share existing office with Oral Surgeon in Georgetown. Call Dr. J. Levitz (416) 279-9971.

ONTARIO—Ottawa: Dental office space available in downtown location. Landlord will provide generous leasehold improvement package. Call (613) 234-4386 daytime.

ONTARIO—Ottawa: Periodontist wanted for cost sharing arrangement with other specialist in modern, fully-equipped office. Excellent location. Please reply to CDA Box 2441.

ONTARIO—Toronto: Bathurst — College Area. 25-year-old, busy general practice for sale. High income. Two fully-equipped ops. Lots of recalls. Computerized. Will ensure smooth transition. Owner relocating north of the city. Please call (416) 923-5881 or (416) 498-9199.

QUÉBEC—Montréal: Fully-equipped 2 operator dental office for sale. This modern office is in excellent condition. Situated in the Côte des Neiges area one

block from the metro. Excellent patient flow. This office is priced right for immediate sale or within four months. For information, phone (514) 737-2251.

NOVA SCOTIA—Bridgewater: Exceptional opportunity. Very busy modern family practice available in beautiful town only one hour from Halifax. Well-established, excellent income. Strong economy provides the conveniences of city life without the hectic pace and problems. Close to many lakes, rivers, ocean beaches. Contact: 6452 Vienna St., Halifax, NS B3L 1S8 or phone (902) 454-9027 or 454-3748.

NOVA SCOTIA—Lunenburg: Practice for sale in modern medical-dental centre. Includes two fully-equipped operatories and cost-shared facilities such as spacious reception, hygiene, lab, panoramic x-ray facilities. Ideally located next to hospital and close to schools, shopping area and recreation facilities including swimming, golfing, boating, tennis, etc. Just one hour from Halifax. Please reply to: Robert Murray, DDS, P.O. Box 370, Lunenburg, N.S. B0J 2C0 or phone (902) 634-8880 (O) or 624-9966 (H).

NOVA SCOTIA—Sackville: Two year old practice in mall priced for immediate sale. Located in growing suburban area. May stay on as associate for transition. Phone (902) 466-5484 (home).

Associateships Available

YUKON—Whitehorse: Full-time associate required to assume well-established, quality general practice. Current associate will be taking indefinite maternity leave in Spring 1989. Good opportunity for young, conscientious dentist interested in high-quality, total patient care. Practice in a friendly, relaxed atmosphere close to the finest wilderness area in Canada. Future partnership opportunities available for the right individual. Phone: Chuck Hazen (403) 668-6707 collect or write: 5110 — 5th Ave, Whitehorse, Yukon Y1A 1L4

BRITISH COLUMBIA—Dawson Creek: Full-time associateship available in fixed and/or removable prosthodontics or general practice. Unique office setting in the foothills of British Columbia's Rockies; optimum outdoor and family rearing location. Phone (604) 782-3939.

BRITISH COLUMBIA—Thompson-Okanagan Region: ASSOCIATE REQUIRED. Exceptional opportunity for full- or part-time associate in busy, quality practice established 10 years. Contact: Dr. Barry R. Goldberg or Rita Barten, Box 188, Lillooet, BC V0K 1V0 or phone: (604) 256-4616 8 am to 5:30 pm or (604) 256-7162 after 5:30 pm.

BRITISH COLUMBIA—Vancouver: PEDIATRIC ASSOCIATE required for busy quality practice. Opportunity for partnership possible. Please reply in confidence to CDA Box 2444.

BRITISH COLUMBIA—Vancouver: Full-time associate required for dental office in downtown Vancouver. Please call (Tuesday to Saturday) Dr. Ng or leave message with receptionist at (B) (604) 873-8117. Experience preferred.

BRITISH COLUMBIA—Victoria: Full-time and part-time associates required for a new, modern mall practice in Victoria, BC. Partnership/purchase opportunity available. For more information, contact: Dr. Thakore or Dr. Mehta at (604) 585-4044 or 294-0846.

ALBERTA: Associate required for very busy rural practice in St. Paul with possibility of future buy-in. Associate could begin June 89. St. Paul is a town of 5200 people located 200 km northeast of Edmonton. Enthusiastic, quality-conscious individuals are asked to contact: Dr. Larry Hodinsky, P.O. Box 235, St. Paul, AB T0A 3A0. Tel: (403) 645-2232 Bus. or (403) 645-5482 Res.

ALBERTA—Red Deer: Associate needed for a modern and well-established pediatric dentistry practice in Central Alberta. Red Deer is a thriving community with superb cultural, recreational facilities with a growing industrial base. My practice provides all phases of routine pediatric dental care, including orthodontic treatment and treatment under general anesthetic at the Red Deer Regional Hospital Centre. This is a unique opportunity for an ambitious and dynamic doctor. Partnership could be discussed. Please call: Dr. Vinay Chafekar (403) 347-5224.

ALBERTA—South East: Busy family practice with four treatment rooms plus a smaller satellite practice offers an excellent opportunity for an associate. The office is fully computerized with pan and

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SASKATCHEWAN: Extreme southeast corner of the province. Be fully booked from day one and enjoy total autonomy in your practice. An ideal opportunity for a young grad to build up your assets quickly. Buy-in option available. Contact: Dr. Clay Johnstone at (306) 453-6346.

MANITOBA—Winnipeg: Oral and Maxillofacial surgeon associate required (leading to partnership) for full range O.M.F. practice. Expertise in T.M.J., implants, orthognathic. Fellowship and/or eligibility. Please reply to CDA Box number 2446.

ONTARIO—Ottawa: ASSOCIATE REQUIRED Large group practice requires a competent associate to take over an existing practice. Please call Dr. John Connelly at (613) 728-1874.

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ONTARIO—Central Toronto: Part-time associate required for general practice. All day Friday and possibly one other day. Call Dr. I.M. Sabatini (416) 961-6726.

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ALBERTA—Edmonton: I am searching for a hardworking, ambitious, quality-oriented dentist to practise in a dental clinic situated with a busy walk-in medical clinic. This dental office has all new equipment, including Pan. This doctor should have the desire to succeed independently and reap the rewards in one year with a possibility of partnership. Are you that dentist? Please contact (incl résumé): Dr. N. Manji, 9710 - 182 St. Edmonton, ALTA T5T 3T9 (403) 489-1799.

ONTARIO—Ottawa: Modern, well-established periodontal practice requires a full-time associate with opportunity for partnership. Candidate should be a certified periodontist with NDEB certificate and membership in the Royal College of Dental Surgeons of Ontario. Call Dr. J. Kershman (613) 738-1108 or 521-8161.

ONTARIO—North Toronto: Position available immediately for a Paediatric dentist with Ontario certification in a modern, well-established private practice. Full range of dental care provided from preventive to orthodontic services; well care and special needs (mentally and physically compromised) children and adolescents. Associateship with future prospects for partnership or cost sharing arrangement. Please reply to CDA Box 2426.

ONTARIO—Toronto: ANESTHESIA ASSOCIATE required for general dentistry practice in Willowdale. Candidate must have anaesthesia/sedation background. Modern five operator, team approach. Partner retired. Position available immediately. Please contact: Dr. J. Mel Hawkins, 4800 Leslie St, Leslie Professional Building. (416) 498-8484.

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QUÉBEC—Montréal: Dentiste bilingue demandé pour travailler à pourcentage sur Côte des neiges, coin Lacombe. Édifice caisse populaire à Montréal (514) 342-1742. Bilingual dentist required to work percentage. Côte des neiges, corner Lacombe, Caisse Populaire Building in Montréal (514) 342-1742.

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MANITOBA—Winnipeg: For Sale. Hydrocolloid unit plus good supply of heavy body and cartriloids plus 16 trays. \$250.00. Pantograph and Pantronic, Verichek plus accessories and extras. All for \$2500.00. Call (204) 284-5634 days or (204) 257-1117 evenings.

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Craig, Jack L.: Dr. Craig was a graduate of the Faculty of Dentistry, University of Toronto, in 1946. He conducted a practice in Orleans, Ontario.

Cook, Walter F.: He received his DDS degree from the University of Toronto in 1962. Dr. Cook practised dentistry in St. Catharines, Ontario.

Godsoe, Walter Henry: Born in 1913, Dr. Godsoe received his DDS degree from the University of Toronto in 1929. He conducted a dental practice in Toronto. Dr. Godsoe was a Life Member of the Canadian Dental Association.

Harper, S., of Weston, Ontario, was born in 1899 and graduated from the University of Toronto dental school in 1924. He was a Life Member of the Canadian Dental Association.

Harron, W.G.: Born in 1900, Dr. Harron was a graduate of the Royal College of Dentists, Toronto, in 1925. He conducted a long-time practice in Toronto. He was a Life Member of the Canadian Dental Association.

Hurst, D.K.: Dr. Hurst was a graduate in dentistry from McGill University, Montreal, in 1957. He conducted a practice in Brandon, Manitoba.

McCauley, G. He was a graduate of the Royal College of Dentists, Toronto, in 1924, and practised in Hamilton, Ontario.

MacNicol, Thomas Kenneth: Born in Pipestone, Manitoba, Dr. MacNicol was a graduate of the Northwestern University dental school in 1923. He conducted a private dental practice in Vancouver.

Mitchell, F.: Born in 1922, Dr. Mitchell was a graduate of the University of Toronto, Faculty of Dentistry, in 1946. He practised dentistry in Blind River, Ontario, 1946 to 1953 and then in Sault Ste. Marie, Ontario, from 1953 to 1957. He then returned to Blind River and practised until 1988.

Paradis, Philippe: Diplômé de la Faculté de médecine dentaire de l'Université de Montréal en 1975, le D^r Paradis exerçait sa profession à Rouyn (Québec).

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We've got substandard standards

It's all there in the CDA Code of Ethics — "Quality of care should be a primary consideration of the dental practitioner." Disregard for the moment that I disagree with "a primary consideration" — to my antiquated mind, the phrase should be "THE primary consideration" — we can argue about that another time! There can be no legitimate argument, however, against the importance of "quality of care" in the measurement of the credibility of a profession. Health care providers must never assume that the miraculous repair and recovery capabilities of the human body, can replace a conscious effort to maintain exceptional levels of care. If there is even one practitioner out there today who delivers less than the optimum of his/her capabilities each and every day, then the dental faculty that gave him (the generic term henceforth) his doctorate, has abrogated its responsibilities.

"I'm being unreasonable, unrealistic or just plain silly" are probably some of the kinder thoughts that are going through your mind at this moment. Try to control the urge to throw the Journal across the room or into the garbage for the moment (after all, my column was the editor's only irrational act in this otherwise outstanding issue!) and hear me out.

Health care providers are unique individuals. Physicians and dentists treat patients without judging the irresponsibility that may have created the problem under treatment. We retain a sense of humour and sensitivity in dealing with a group of patients who either fear us outright, or are convinced that sadism was a prerequisite for dental graduation. Every patient will quickly tell you that they have total trust in their current dentist. Unfortunately, far too many of these same people have a horror story to tell you about their previous practitioner. Unhappily, only some of those stories are fairy tales.

Governments are becoming increasingly uncomfortable with an apparent absence of accountability between the health professions and the public. In some provinces, "public" also translates as "the government treasury paying the health bills". In Ontario, one third of the current annual budget goes to support The Ministry of Health. In a recent discussion, Ontario's Health Minister, the Hon. Elinor Caplan suggested that the absence of professional peer review is as harmful to the practitioner as it is to the public. She believes that the profession that governs itself by creating and monitoring standards of care through peer review, not only protects the public, but actively discourages government intervention. Apparently talking "Motherhood" no longer is sufficient assurance, and I for one, tend to support the action of putting your good faith on paper.

The current thrust in dentistry, to profile practitioners (your choice of the agency to do the deed!) suggests that this data has a yardstick to be measured against. In fact, it seems that a "blip" on the printout, rather than some definitive comparison against written standards, initiates further investigation. The information garnered, according to a recent article by Dr. Brian Rocky in the Journal of the CDA (Nov. 1988, pp. 817-819) is "reviewed under a format that compares the frequency of delivery of those services in comparison to other practitioners". This isn't peer review with a thought to quality of care, this is strictly an attempt to discourage fraudulent claims by dentists to insurance companies! This is not only unsound logic, it's an awfully inefficient method of paying the salary of somebody who is looking for something that may not even represent a lack of competent practice. It may enhance our status with the underwriters, but it's not doing much to protect the patient's well being.

We've taken a giant step forward by at least thinking (and in at least one province) actively pursuing the preservation of excellence. (It would be unfair to comment that this activity was probably initiated by a fear of a provincial government acting unilaterally in this regard themselves — so I won't.) One fears, however, that the maintenance of credibility with such actions is a pipedream unless parameters are in place to reflect our expectations of the level of care under scrutiny. Such standards are being drawn up in the United States. It has been suggested, and in some instances, enforced, that surgeons who do not perform a minimum number of specific procedures in a year, should not be allowed to perform that procedure. It is argued that in the absence of being able to assess the competency of each surgeon every year, at least repetitive activity could suggest a certain level of capability. It's not a perfect method of monitoring competency but it beats anything we've currently got in dentistry. We may be able to pinpoint the dentist whose billing practices are shoddy, but we're not making much impact on the guy who bills properly for lousy work!

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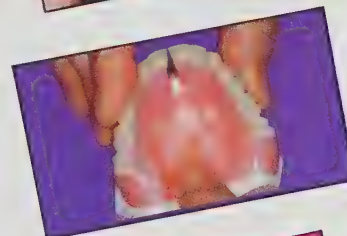
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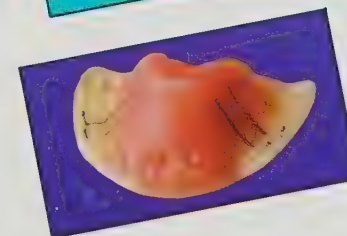


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THE FRENCH
POLYNESIAN
WHO STUDY,
1981-84

UNIVERSITY
OF MICHIGAN
STUDY,
1988

THE MONTREAL
CHEWING GUM
STUDY,
1985-87

THE WHO
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1981-84

THE FINNISH
XYLITOL
STUDY,
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Notice of change of address should be received before the 10th of the month, to become effective the following month.

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada — \$42; United States — \$44; all other — \$46. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted to the Journal. Publication of an advertisement does not necessarily imply that the Canadian Dental Association agrees with or supports the claims therein.

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The Canadian Dental Association serves the dental profession — and through the profession the Canadian public — as the authoritative national voice and resource for dentists.

In cooperation with the provincial dental associations and affiliated organizations, CDA offers services, in both official languages, intended to support and advise all areas of dentistry and to represent, protect, promote and develop the interests of the dentist as ethical practitioner, professional, educator, student, researcher, business person, citizen and individual.

CDA recognizes a particular responsibility to contribute to the development of national positions and standards related to dentistry, dental education, dental research, dental equipment, dental materials and dental personnel.

CDA is dedicated to the principle that all Canadians should have the best oral health care it is possible to provide; it actively seeks input from and dialogue with governments, consumers and all those interested in dentistry to enable it to serve more effectively both its members and the Canadian public.

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May 1989

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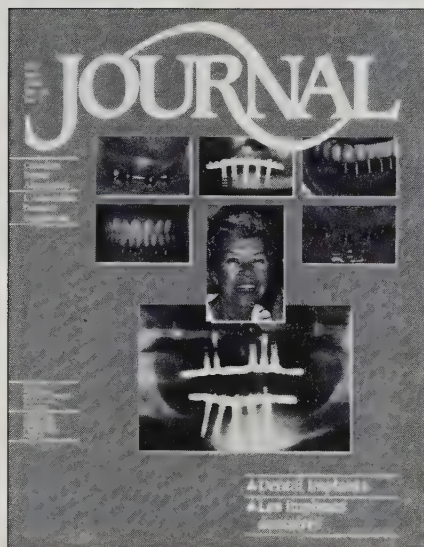
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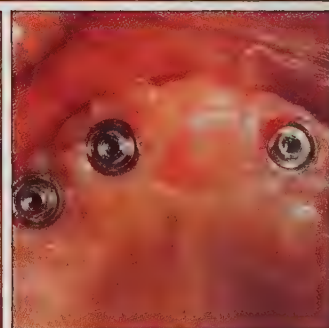
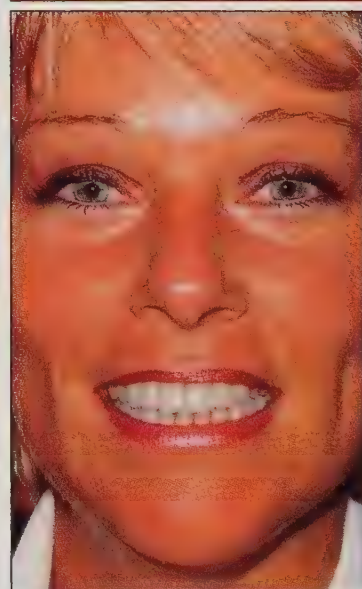
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Implant Prosthodontics: The Advent of Osseointegration

Very few health disciplines can match modern day dentistry's claim in the enhancement of the public's quality of life. Dentists do this by preventing and controlling dental diseases, and by replacing missing teeth and their supporting tissues. The discipline of Prosthodontics in particular can lay claim to an ancient (if not always) distinguished tradition of ingenious intra-, and extra-oral salvage endeavours by reconciling digital and technical skills with dental materials information and advances. The prosthodontic responsibility has always been an explicit one: the compensation for deficits in the total area of periodontal ligament available for tooth support.

It is easy to understand why university dental curricula have reflected this commitment. Canadian dentists and their patients have benefitted immeasurably from this approach. However, a significant number of patients could not benefit from traditional prosthodontic initiatives. The biologic price resulting from the partial or complete edentulous predicament of these patients precluded reliable prosthodontic prescriptions. There was an inevitable compromise in their quality of life. Various ingenious pioneering efforts were introduced for such patients — ridge augmentations with alloplastic materials, blade implants — in an attempt to provide at least interim solutions. These techniques were long on anecdote but short on science, and fortunately their proponents' anecdotal claims did not become rigid with time, because science eclipsed their claims.

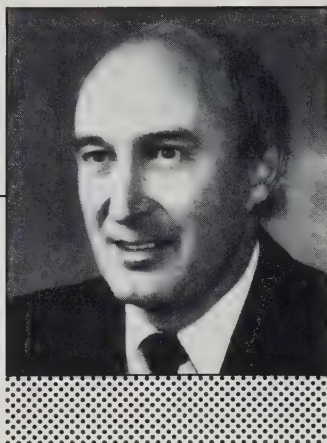
The catalyst for a departure from the half way biotechnology of the 60s and 70s was the 1982 Toronto Conference on Osseointegration. This event introduced invited North American dental educators to the applied concept of permanent anchorage of functioning tooth root analogues in living bone. The seminal work of P.-I. Brånemark and his colleagues from the University of Gothenburg, Sweden, became the immediate catalyst for a profound change in prosthodontic treatment and education. This led to involvement in replication studies, diversification of application and understanding the basic mechanism of osseointegration, by clinicians and basic scientists at the University of Toronto and other institutions.

Inevitably, given the tradition of clinical and manufacturing freedom which we dentists have enjoyed on this continent, the years since the Toronto Conference have witnessed an explosion of commercial products, all claiming the buzzword "osseointegration". While scientific and commercial activity in this applied technique has brought great excitement to clinical dentistry in general, three important points have emerged: (1) Dentists can claim with impunity to replace teeth with osseointegrated dental implants for which longitudinal success criteria have evolved. There exists compelling proof that the burden of illness associated with edentulism can be profoundly reduced. Furthermore, preliminary evidence is available to support osseointegration application for partially edentulous patients as well, although this data is relatively short term, (2) A virtual state of anarchy exists as far as manufacturers' claims are concerned. The scientific yardstick established by the Brånemark system has not been adhered to by all the other advertised systems. Dentists must realize that proof for safe and predictable clinical treatment by solemn declarations at clinical conferences, or in commercial handouts, is not a substitute for good science, and (3) Dentistry's scientific foundations are constantly being reinforced and University teaching programs reflect this ongoing commitment. Both graduate and undergraduate students are being taught osseointegration principles and techniques in dental schools as the practice of dentistry is re-imaged and re-defined.

Devoting an issue of our Journal to the topic of osseointegration should stimulate dentists across Canada to address these three points. Dentistry is a very young science although its clinical contributions have already been enormous. However, our continued growth and development as a health discipline is intimately tied up with the quality of science and education provided by our universities. Brånemark's research on osseointegration has been a milestone in this ongoing endeavor.

George A. Zarb, BChD, MS, DDS, FRCD(c)
Head, Prosthodontics Department
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University of Toronto

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Ethics — Changing with the Times

Every professional organization has a code of ethics by which its members must abide. By definition, a code of ethics is a set of principles of moral behavior, defining responsible conduct in specific professional situations. This definition is from the preamble to the Canadian Dental Association's Code of Ethics.

Society has given to the profession of dentistry the privilege of self-regulation. In return, dentistry owes society responsible management of the profession. As professionals, it is necessary to adhere to a code of moral behaviour which clarifies our responsibilities in our relationship with our patients, our colleagues, and society. It is the duty of every responsible dentist to be familiar with this code of ethics, and also the laws governing dentistry within the jurisdiction in which he practises. Moreover, he/she should adhere to them.

A former President of the United States, Harry Truman, once said, "A person who is fundamentally honest doesn't need a code of ethics. The Ten Commandments and the Sermon on the Mount are all the ethical code anyone needs." A dentist is a member of a health profession, and has a duty of service to the public. This should include the delivery of quality care, competently and timely, within the bounds of clinical circumstances. How often have we heard the phrase, "times are changing" and "we must keep up with the times"? When it comes to an issue as basic and traditional as ethics or morality, it would seem that not much could bring about a change in this area.

Over the past few years, dentistry has seen a number of important issues come to the forefront, prompting a need for the profession to develop appropriate ethical positions, and to study and review our current code of ethics. I'm referring to issues such as capitation, advertising, and treatment of patients with infectious diseases. Development of an accompanying document on patients' rights would also appear to be timely. It is necessary to carry out this review to ensure that the Code of Ethics addresses the profession's responsibility to the public.

To this end, Executive Council has decided to encourage the Committee on Ethics to become more active, to develop and pursue discussion in these areas, and to recommend development of an appropriate ethical position for the Canadian Dental Association. Dr. Jim Brookfield of Kirkland Lake, Ontario, has willingly accepted the chairmanship, and along with his committee, will bring our Code of Ethics up to the times.

Although the Ten Commandments and the Sermon on the Mount may serve as a basis for fundamental behaviour, the application of a modern code of ethics to fit today's practise of dentistry, is very essential in our rapidly changing times.

We look forward to this with great anticipation.

*Jack W. Niedermayer, BA, DDS
President of the Canadian Dental Association*

The Netherlands — a leader in caries decline

Interest in the Netherlands is increasing this year in the world dental community, particularly because the City of Amsterdam is the site of the 77th World Dental Congress of the Fédération Dentaire International — September 2-8.

The dental profession there has made some great strides in recent years, attaining high standards in dental education, dental research and dental practice. In the past 30 years, the Netherlands has progressed from being a developing nation with regard to dental health, to become one of the leading countries for caries decline. Eighty per cent of 12-year-olds have no caries. Because of past history, however, about one-third of the adult population is edentulous.

Mainly in the last ten years the dental profession has grown by approximately 50 per cent to 6,000 practitioners. Most of them have their own dental practice.

Only about 1,000 are working as employees. Ten per cent of the dentists are women.

Due to the exponential growth of the profession many young dentists were not able to start their own practices and remained unemployed. Many emigrated to other European countries like West Germany, Belgium and Italy.

The Dutch Dental Association (DDA), membership of which is voluntary, is happy to have 90 per cent of practitioners in its membership. This gives the DDA a strong position in negotiations with government and insurance companies.

The largest part of the population (60 per cent) is insured under the sick-funds system. This is a fee-for-service system with a limited number of services (e.g. no fixed prosthetics). Young people up to age 19 have better dental health care possibilities than adults in that

system. The 40 per cent not covered by the sickfunds are not insured, nor are they insured on a private basis. Handicapped persons, government employees and military personnel have different arrangements.

The government is talking about a fundamental change of the health care delivery system. So, perhaps in 1989 everything will be different! Δ

World Health Organization's annual Fellowships

OTTAWA — Details of the annual World Health Organization (WHO) competition for fellowships for Canadian citizens wishing to undertake short-term studies abroad were announced recently by Health and Welfare Canada.

Some 10 to 15 fellowships, up to a maximum of \$5,000, are expected to be approved this year.

Health personnel eligible to apply include those in medical, paramedical and health related fields, including veterinarians and veterinary assistants, dentists and dental auxiliaries, engineers in the field of sanitary science, laboratory technologists, nutritionists and rehabilitation specialists, as well as teachers and administrators in all of these fields.

Persons engaged in pure research as well as undergraduate and graduate university students, are not eligible to apply for WHO fellowships.

Applicants for WHO fellowships will be rated by a Canadian Selection Committee on the basis of education, experience, proposed area of study, field of activity and the intended use of their newly acquired knowledge. The final decision regarding the awarding of a fellowship rests with the World Health Organization.

Applications must be received before June 30, 1989. Additional information and application forms can be obtained by writing:

WHO Fellowships
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Affairs Branch
Health and Welfare Canada
Jeanne Mance Building
Tunney's Pasture
OTTAWA, Ontario K1A 0K9 Δ



The traditional Dutch windmills are still a common sight in the countryside.

Curing light damage linked to disinfectant

Glutaraldehyde solutions used to disinfect curing light guides may damage the guides' fiber-optic rods and compromise the performance of light curing units, according to a study recently published in *General Dentistry*.

Researchers at Oregon Health Sciences University School of Dentistry undertook the study after they noticed that some composite resin restorations placed in their clinic were chalky and soft after curing, while others required extremely long curing times to achieve an acceptable hardness. The researchers, Drs. William T. Dugan and John H. Hartleb, examined the light guides and observed what appeared to be a coating on the curing tips. At first they thought the coating was cured composite resin picked up from contact with restorations, but a polishing procedure to clear the tips did not improve their performance. The researchers then observed that the insertion ends of the removable light guides also were coated, and that polishing of both ends of the guides restored them to normal curing function.

Writing in the January/February 1989 issue of *General Dentistry*, journal of the Academy of General Dentistry, Drs. Dugan and Hartleb explain that the finding of

deposit on both ends of the light guides led them to suspect an environmental factor as the cause. They conducted an experiment to examine one such factor: the 10-minute immersion in a buffered glutaraldehyde solution that light guides in the clinic underwent after each use.

In the experiment, fresh light guides were immersed in the buffered solution for four days. Depth of cure subsequently achieved by these guides decreased significantly, as did curing depths affected by light guides that had been in clinical use with intermittent immersion in glutaraldehyde for 10 months. Fresh light guides and some that had been resurfaced cured composite resin to a depth of 4.5 mm; the clinically used guides and those stored in disinfectant for four days cured to depths of 2.0 and 2.5 mm.

Scanning electron microscopy photographs of the light guides demonstrated significant damage to the structure of their glass rods after immersion in glutaraldehyde; it was this damage that had created the appearance of a coating on the unmagnified rod ends.

Drs. Dugan and Hartleb recommend that other disinfecting solutions and other brands of lamps (they tested the Visilux 2) be examined for similar problems. △

CFDE/Teledyne Water Pik Canada Program a success



Mr. Ralph Cain, Group Product Manager of Teledyne Water Pik Canada, presents a cheque for their 1988 contribution to Ms. Janice Forsythe, former Executive Secretary of the Canadian Fund for Dental Education.

In April of 1988, an innovative fundraising program was developed by CFDE and Teledyne Water Pik Canada.* In recognition of professional recommendations for the use of a Water Pik dental system, Teledyne Water Pik contributes \$1.00 to the Canadian Fund for Dental Education. The 1988 donation was more than \$2,000, with hopes for an even greater donation in 1989.

The CFDE fund does not benefit from this program unless the consumer rebate coupons provided by Teledyne Water Pik Canada are completed in full; the dentist's name, address and postal code are to be included.

This is a most promising joint program for which the Trustees of the CFDE are very grateful. △

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* This fundraising program does not imply endorsement of the product.

In the United States

High school students offered a 'taste' of a dental career

At least three universities in the United States offer high school students an opportunity to become "dentists for a week" to help them decide if they want to pursue a career in that profession, according to an item in a recent issue of AGD Impact, the news magazine of the Academy of General Dentistry.

The students have the opportunity to spend one week during the summer in a dental school. They spend the week listening to lectures on dentistry by the school's faculty members and learn about the different disciplines in dentistry.

The Oregon Health Sciences University School of Dentistry has offered this type of program for the longest period — 22 years.

"Our goal is to give these young people the flavor of what it's like to be a dental student and a practising dentist in one week", said Jack Clinton, DMD, Director of Dental Careers Institute and Assistant Dean for Student Affairs. "Of course we have a few who say, 'thank God I spent this week here, because now I know for sure that I want to be a banker.' But we feel good about that too, because as far as we're concerned, we want to help young people make the biggest decision in their lives."

Loma Linda University, in a suburb of Los Angeles, offers a similar program.

"I started this program because over the years I had noticed that there was no place for students to check out the field of dentistry, short of enrolling in a dental school," said Ben Grant, DMD, director of the Loma Linda program. "I have heard students in their junior year say, 'if I had known dentistry was like this I would have never gotten into it.'"

The Baylor College of Dentistry's program in Texas is slightly different in that it is a year-round experience, where students visit the dental school once a month and are also invited to stay for a week during the summer.

"Students become aware of what's going on in the dental profession," said Charles Arcuria, DDS, Chairman of Baylor Dental Explorers, and Assistant Professor at the University. "We're hoping they

could have a first-hand experience rather than just reading something in a pamphlet."

The program is seen as an incentive to increase interest in dentistry as a career choice. There has been a marked decline in the numbers of applications to dental schools in the United States in recent years. Δ

Did you know?

The Journal requires a Cartoonist! That's right! We don't want to be serious **all** the time despite comments that Ottawa is full of jokers). We look forward to adding a little humour now and then.

If any of our readers feel they have a flair for drawing cartoons — with a dental theme of course — send the Editor a sample.

Watch future Journal pages for the best in Canadian dental art form!

CDA Retirement Savings Plan

Unit values: (Funds are valued weekly)

Fund	Unit values as at	
	March 31, 1989	February 28, 1989
Bond & Mortgage Fund	64.36042	63.31266
Common Stock Fund	15.29719	15.07574
Money Market Fund	43.84602	43.38529
Balanced Fund	27.10410	26.71538

G.I.C. Fund Term	*Interest rates as at	
	March 31, 1989	February 28, 1989
1 yr	11.55%	11.625%
2 yr	11.30%	11.50%
3 yr	11.05%	11.15%
4 yr	11.05%	11.15%
5 yr	11.00%	11.15%

(*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

March 31, 1989	February 28, 1989
\$107,996,719	\$104,431,912

For further information:



CDA RSP

Write:

CDSPI

Retirement Services Dept.
Suite 600
2 Lansing Square
Willowdale, Ontario
M2J 4Z3

or phone, toll-free:

Western and Atlantic Canada
and Ontario Area Code 807
only 1-800-268-5418
Quebec and Ontario, (except Area
Code 807) 1-800-268-3411
Metro Toronto Area 497-7117

Professor collects, assesses, childrens' books on dental awareness

Ruth Rees, PhD, Assistant Professor in the Faculty of Education, Queen's University, Kingston, Ontario, has completed a research project of considerable interest to the dental community, particularly pedodontists.

Dr. Rees has collected and assessed all available books on the topics of dental awareness and dental education, pertaining to children. She has prepared a bibliography of all the books she would recommend to dentists and dental educators, on these subjects. She has also prepared an extensive annotated bibliography that she says she would be pleased to share with any of this Journal's readers.

Recommended Childrens' Books on Dental Awareness and Education

The purposes of children's books are many: to educate, to entertain, to inform, to demonstrate a caring and/or sharing between people (usually between child and adult or among children), to encourage reading and self-directed learning, to reinforce ideas through activities, to promote thinking and interpretation skills, to increase the awareness of children, to prepare children for the 'real' world, to convey norms and attitudes. Children's books about teeth and going to the dentist should fulfil the majority of the purposes listed above.

As an educator who has acquired (through marriage) an interest in dentistry and as a parent, I wanted to investigate exactly what children's books are available on the subject and, more importantly, what messages these books are conveying to our children. Consequently, this article is an attempt at answering these two questions. Parents and other educators in the health, dental, and teaching fields should also be interested

in discovering what children are learning from books on the subjects of teeth, dentistry, and going to the dentist.

Over several years, attempts have been made (and are still ongoing) to locate all children's books related to the topic of dentistry. First, the *Children's Books in Print* was referenced. Those publishers were contacted to supply the book and specify what others they had in their storerooms. Then, dental societies were contacted. A local pedodontic and several dental health educators and dental hygienists added to the list. Next, a local bookstore became interested in the project and began its own search. Dental supply companies, as producers of dental education materials and distributors of children's books themselves, provided some titles and materials, as well. In total, over fifty books, reading and work or activity books, have been identified. These books were read and assessed by this author and at least one other person, either a fellow educator or a pedodontist, to attain some reliability of evaluations.

These books were reviewed according to the following (arbitrary) format:

- a) content information — type of book, theme, purpose; and
- b) evaluative comments — suitability for the intended group of children, noteworthy comments.

All the books which are *recommended* are described below: first the non-fiction/reference books, then the one biography, next the story books, then the activity books, and last, books for the dental educator. The books are listed alphabetically by title. All categories, except for the final one, books available for the dental health educator, are complete.

A Non-fiction/Reference Books

1. *Careers in Dental Care* by Joyce K. Kessel.

- Minneapolis: Lerner Publications, 1984. For children in the junior grades (4-6).
2. *Charlie Choppers grows and grows* by Anne Goresht. Calgary, ALTA: Wholesome Press, 1979. For children in the primary grades (1-3).
3. *David decides about thumbsucking* by Susan M. Heitler. Denver, CO: Reading Matters, 1985. (Also distributed by Semantodontics, Phoenix, AZ. Intended for thumbsuckers and their parents.
4. *Dental Care* by Brian R. Ward. Toronto, ONT: Franklin Watts, 1986. For children in grades 4-10.
5. *Going to the Dentist* by Glen Husak. Sewickley, PA: Hopewell Books Inc., 1983. An adult basic education book (reading level grade 2).
6. *How Many Teeth?* by Paul Showers. Markham, ONT: Beaverbooks, a division of Fitzhenry & Whiteside Ltd., 1962. For preschoolers to children in grade 3.
7. *My Friend The Dentist* by Jane W. Watson, Robert J. Switzer, & J.C. Hirschberg. New York: Crown Publishers, 1987. Also distributed by Semantodontics, Phoenix, AZ. For preschoolers to children in grade 3.
8. *Smile! How To Cope With Braces* by Jeanne Betancourt. New York: Alfred A. Knopf, 1982. For children grade 5 and upwards.
9. *So You're Getting Braces. A Guide To Orthodontics* by Dr. Alvin Silverstein & Virginia B. Silverstein. New York: J.B. Lippincott, 1978. For children in grade 7 and upwards (and for adults).
10. *Teeth* by John Gaskin. Markham, ONT: A Franklin Watts book, Grolier Educational, 1984. For children in the primary grades (grades 1-3).
11. *Teeth* by Sandra Halford. Loughborough, ENG: Ladybird Books, 1978. For children in the primary grades (grades 1-3).
12. *The Story Of Your Mouth* by Dr. Alvin Silverstein & Virginia B. Silverstein. Toronto: General Publishing Co., 1984. For high school students (grades 9 and upwards).
13. *The Tooth Survival Book*. Chicago, ILL: American Dental Association, 1977.

- For children in elementary school (grades 1-6).
14. *Things To Know About Going To The Dentist* by Lisa Ann Marsoli.
Agincourt, ONT: GLC/Silver Burdett, 1984.
For children in junior grades (4-6).
 15. *Your Teeth* by Joan Iveson-Iveson.
New York: The Bookright Press, 1985.
For children in elementary school (grades 1-6).

B Biography

1. *Miss Dr. Lucy* by Carol M. Behrman.
Washington, DC: Herald Publishing Co., 1985.
For children in grades 5-8.

C Story Books

1. *A Trip to the Dentist* by Margot Linn.
New York: Harper & Row Publishers, Inc., 1988.
For preschoolers (ages 3-5).
 2. *Crocodile Teeth* by Majorie-Ann Watts.
Tiptree, Colchester, Essex, ENG: Tiptree Book Services Ltd., 1986.
For elementary school children (ages 5-12).
 3. *Danny and his Thumb* by Kathrun F. Ernst.
Toronto, ONT: General Publishing, through Prentice-Hall, 1973.
For children in primary grades (1-3).
 4. *Doctor de Soto* by William Steig.
Toronto, ONT: Scholastic-Tab, 1982.
For pre-schoolers to children in grade 3.
 5. *Going to the Dentist* by Anne Civardi.
London, ENG: Highgate Press of Usborne Publishing Ltd., 1986.
Part of the "First Experiences" series.
For elementary school children (ages 5-12).
 6. *How Peter Molar looked for a Smith* by Jan and Stan Barton Bohonek.
Cleveland, OH: Adonis Studio, 1983.
Intended for children in primary grades (1-3).
 7. *Jolly Molly Molar* by Barbara Fisher.
New York: Ten Penny Players, 1978.
For children in the primary grades (1-3).
 8. *Karius and Baktus* by Thorbjorn Egner.
London, ENG: Thomas Nelson & Sons Ltd., 1963.
For children in primary grades (1-3).
 9. *Little Rabbit's Loose Tooth* by Lucy Bate.
Toronto, ONT: Scholastic Inc., 1975.
For children in the primary grades (1-3).
 10. *Michael and the Dentist* by Bernard Wolf.
New York: Four Winds Press, a division of Scholastic Magazines, Inc., 1980.
For children in primary grades (1-3).
 11. *My Dentist* by Harlow Rockwell.
New York: Greenwillow Books, 1975.
For pre-schoolers to children in grade 3.
 12. *Once upon a Tooth*
Montreal, Qué.: Johnston and Johnson, 1984.
For pre-school children and their parents.
 13. *Rat Teeth* by Patricia Reilly Giff.
New York: a Yearling book, Dell Publishing Co., Inc., 1984.
For children in the junior grades (4-6).
 14. *Say Cheese!* by Carolyn Dinan.
London, ENG: Faber & Faber, 1985.
For children from pre-school to grade 3.
 15. *So many things to see.*
Pittsburgh, PA: Family Communications, 1977.
- From the producers of Mister Rogers' Neighbourhood, the "Let's Talk About It Series".
For children from pre-school to grade 6.
 16. *Taryn goes to the Dentist* by Jill Krentz.
New York: Crown Publishers, Inc., 1986.
Also distributed by Semantodontics Inc., Phoenix, AZ.
For pre-schoolers, aged 2 to 5.
 17. *Teach me about the Dentist* by Joy Berry.
Sebastopol, CA: Living Skills Press, 1986.
Pre pre-school children.
 18. *The Bear's Toothache* by David McPhail.
Toronto, ONT: Little, Brown & Company, 1972.
For elementary school children (ages 5-11).
 19. *The Berenstain Bears and too much Junk Food* by Stan and Jan Berenstain.
Toronto, ONT: Random House, 1985.
For children from pre-school to grade 1.
 20. *The Lion who wouldn't brush his Teeth* by Mike Peele.
Charlotte, NC: Dental Marketing Concepts, 1981.
For parents and their elementary school aged children.
 21. *The Tooth Chicken* by Rick Reinert Productions.
Milwaukee, WI: Ideals Publishing Corp., 1982.
Distributed by the American Dental Association, Chicago, ILL.
For primary school children.
 22. *The Tooth Fairy* by Elinor Gregor.
Agincourt, ONT: Dominie Press Ltd., 1982.
For multi-ethnic children in grades 1 to 3.
 23. *The Tooth Fairy* by Sharon Peters.
Mahwah, NJ: Troll Associates, 1981.
A giant first-start reader.
For pre-schoolers to those in grade 3.
 24. *The Tooth Witch* by Nurit Karlin.
Toronto, ONT: Fitzhenry & Whiteside, 1985.
For pre-school to grade 3 children.
 25. *The Trouble with Wednesdays* by Laura Nathanson.
New York: B.P. Putnam's Sons, 1986.
For junior readers, in grades 5 to 8.
 26. *Tooth Fairy* by Audrey Wood.
Singapore: Child's Play (International) Ltd., 1985.
For primary children (ages 5-8).
 27. *You can't put Braces on Spaces* by Alice Richter & Laura Joffe Numeroff.
New York: Greenwillow Books, 1979.
Currently out of print. See if you can find a copy. It's excellent!
For children in grades 1 to 3.

D Activity Books

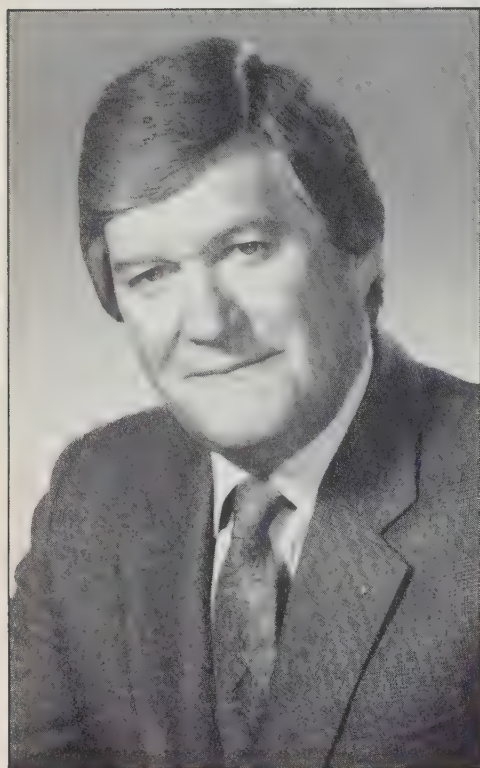
1. *Activity Sheets.*
Winnipeg, MAN: Dental Health Unit of the Department of Health, Manitoba Government.
2. *A Visit From The Dentist.*
Chicago, ILL: American Dental Assoc., Bureau of Health Education & Audiovisual Services, 1984.
For second graders.
3. *Dental Health Activities for Girl Scouts.*
Chicago, ILL: American Dental Assoc., Bureau of Health Education & Audiovisual Services, 1984.

4. *Dental Health Activity Book.*
Chicago, ILL: American Dental Assoc., Bureau of Health Education & Audiovisual Services, 1984.
For third and fourth graders. Available in class sets.
5. *I Love My Teeth. I Know Them and I Look After Them.*
Montreal, Qué.: Dental Depot (Canada) Ltd.
Also distributed by Healthco, Ottawa, ONT.
Available in English and in French.
For children in grades 3-4.
6. *Activity Sheets.*
Ministry of Health, Government of Ontario.
7. *Mother Goose Talks about Teeth.*
Phoenix, AZ: Semantodontics Inc.
For primary children.
8. *The ABC's of Good Oral Health.*
Chicago, ILL: American Dental Assoc., Bureau of Health Education & Audiovisual Services, 1986.
Available in class sets.
For children in the primary grades (1-3).
9. *The Big Adventure Dental Activity Book.*
Phoenix, AZ: Semantodontics Inc.
For children aged 6-12.
10. *The Healthy Tooth Coloring Book.*
Phoenix, AZ: Semantodontics Inc.
For children in the primary grades (1-3).
11. *The Kids Fun Game Book.*
Phoenix, AZ: Semantodontics, Inc.
For children in grades 3-6.
12. *Tommy the Toothbrush* by Robert D. Miller.
Athens, OH: Millrow Enterprises, Inc., 1982.
For children in grades 2 to 4.

E Books for Dental Educators

1. *Dental Health. A Teacher's Guide. K-12.*
Second edition. Ottawa: Health and Welfare Canada. 1981.
2. *Growing up with my teeth* by Kenneth R. Whitcomb, DDS.
Phoenix, AZ: Semantodontics, Inc., 1984.
A parent's guide to children's dental development.
3. *Health Education Dental Health. Teaching supports.*
Winnipeg, MAN: Curriculum Development & Implementation Branch, Education Department, Manitoba Government. Available from Manitoba Textbook Bureau, 277 Hutchings Street, Winnipeg for \$1.50 per booklet.
4. *Learning about your Oral Health. A prevention-oriented school program.*
Chicago, ILL: American Dental Assoc., Bureau of Health Education & Audiovisual Services, 1982.
Five booklets (kindergarten, 1-3, 4-6, 7-9, 10-12).

An annotated bibliography of *all* books on the subject, not just these above recommended books, is available by writing the author: Dr. Ruth Rees, Faculty of Education, Queen's University, Kingston, Ontario K7L 4V1 (613) 545-6220. Please send a cheque or money order for \$4.00 to cover the printing and postal charges. △



A. Jardine Neilson, BA, MSW, CAE

A. Jardine Neilson, BA, MSW, CAE, Executive Director of the Canadian Dental Association, recently completed the Certified Association Executive requirements of the Canadian Society of Association Executives' Council. With the addition of the most recent graduates, Mr. Neilson joins about 200 CAEs in Canada out of 2,000 CSAE members and an estimated 5,000 association managers.

Mr. Neilson was appointed Executive Director of the Canadian Dental Association on August 1, 1985, after a distinguished career with the federal government. △

The American Academy of Periodontology has appointed Dr. Robert J. Genco as the new Editor of the Journal of Periodontology. Dr. Genco is the Chairman of the Oral Biology Department and an associate dean for Graduate Studies at the State University of



David Zapiruk, left, is the senior student in the school of dentistry at the University of British Columbia, and is the representative to the Canadian Dental Association's Council on Student Affairs. He recently received a plaque from the CDA. It was presented by the UBC Dean of Dentistry, Dr. Paul Robertson.

New York at Buffalo dental school.

Dr. Genco succeeds co-editors Drs. Timothy O'Leary and William Hurt. △

Dr. Richard L. Pass of Burlington, Ontario was recently elected President of the Canadian Association of Orthodontists, at the annual meeting in Edmonton, Alberta.

At the same meeting, Dr. Yale Malkin of Vancouver, was named President-elect. Other directors of the executive are: Dr. Wayne Barro, of Dartmouth, Nova Scotia; Dr. Malcolm Yasny, of Toronto; Dr. Terry Carlyle, of Edmonton, and Dr. Brian Hurd, of Burlington, Ontario.

Dr. Rowland D. Haryett was presented with the Distinguished Service Award in recognition of his outstanding contributions and exemplary service over many years for the benefit and advancement of the orthodontic profession and the Association. The award is the highest honor bestowed by the Canadian Association of Orthodontists. △

Dr. Richard Rodney, a Toronto dentist, has been elected International Trustee of Alpha Omega Dental Fraternity at its 81st Annual Convention in Florida. (Alpha Omega is an international dental organization with 11,000 members in 16 countries.)

A graduate of the University of Toronto's Faculty of Dentistry in 1965, Dr. Rodney served as International Regent for the Fraternity's Ontario area from 1985 through 1987. He has also served for many years on the Board of Directors of the Alpha Omega Foundation of Canada, the Fraternity's charitable arm.

A member of the Canadian and Ontario Dental Associations, Dr. Rodney has gained fellowships in both the Academy of General Dentistry and the Academy of Dentistry International. △

Patient Education Questionnaire

Got a minute? We could use your help.

The CDA is interested in knowing more about how dentists communicate with their patients. Please take a couple of minutes to answer the following questionnaire, tear it out, and mail it in. Your responses will assist the CDA in developing the patient education tools you need.

1. How important is patient education in your practice?

- ☐ extremely important
- ☐ very important
- ☐ somewhat important
- ☐ not very important
- ☐ not at all important

Comments: _____

2. Where do you get your patient education materials? (please check as many as applicable)

- ☐ CDA
- ☐ ADA
- ☐ Product suppliers (please specify: _____)
- ☐ Provincial dental association
- ☐ Provincial government
- ☐ I make my own
- ☐ Other (please specify: _____)

Of the sources listed above, which ONE do you use most?

3. How do you decide which patient education materials to use?

4. Complete the following question only if you use patient education materials from the CDA.

Please rank CDA materials on a scale of one (lowest) to five (highest) on the following qualities:

QUALITY	ITEM		
	Brochures	Fact Sheets	Posters
Content (1 = poor, 5 = excellent)			
Appearance (1 = poor, 5 = excellent)			
Price (1 = too low, 5 = too high)			

Keep Smiling



CANADIAN DENTAL ASSOCIATION

5. If you don't use CDA patient education materials, why not?

6. Which patient education materials do you use most often? (Please identify by title and source):

1. Title: _____ Source: _____

2. Title: _____ Source: _____

3. Title: _____ Source: _____

7. In your office, who maintains the supply of patient education materials?

8. What general topics do your patients most want to know about?

1. _____

2. _____

3. _____

9. Are there *specific* patient education materials that you would like in addition to what you now have?

☐ Yes

☐ No

If yes, what are they?

1. _____

2. _____

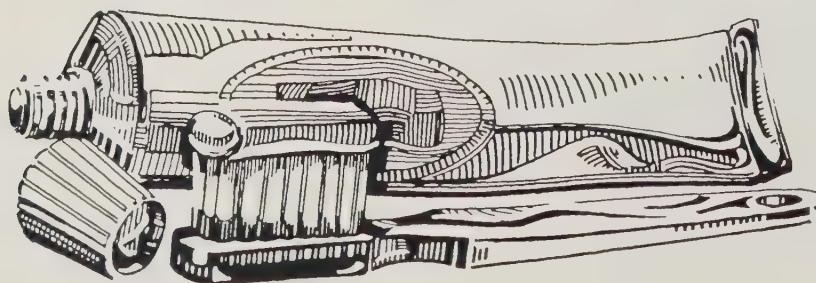
3. _____

Thank you for your time. Please tear this page out and mail to:

Patient Education Questionnaire
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario
K1G 3Y6

Optional: Name: _____

Address: _____



*Loss of
Coordination*

Double Vision

Loss of Balance

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CDSPI Reports

One of the most common types of Office Contents claims received by the Canadian Dentists' Insurance Program (CDIP) is for water damage. These claims also frequently involve Comprehensive General Liability Insurance because of related damage to the property of other tenants in the building. In the first nine months of 1988, water damage accounted for 28 per cent of Office Contents and 70 per cent of Comprehensive Liability claims.

Here's an interesting case study involving two dentists and another tenant of a Medical/Dental Building.

Dr. Smith*, a dentist, has his office on the second floor of the building. For some time he has been aware that the master cut-off switch in his office is not operational and he has good intentions about getting it repaired.

However, before repairs are done, a messy situation results. After Dr. Smith closes his office for the weekend, the plastic water hose to his chair loosens under pressure surges, and separates at a connection. For several hours water escapes and saturates the carpeting in his office.

From there the water penetrates to the ceiling of Dr. Jones' dental office directly below. The ceiling collapses and water soaks the carpets in Dr. Jones' office.

The messy situation goes further. Water leaks from Dr. Jones' premises to the office of Dr. Shaw, a medical practitioner, located in the basement of the building. Having no place to go, the water collects in this area and covers the entire floor. Equipment is also damaged before the building's cleaners discover the mess and call Dr. Smith.

The Clean Up

Dr. Smith and Dr. Jones were both insured with CDIP, and all repairs are completed satisfactorily. Water was extracted from the carpets, the carpets were cleaned and the ceilings repaired.

Dr. Shaw, the medical practitioner, suffered the most damage and was not satisfied with the clean up of his office. His insurance did not cover the replacement cost of damaged items and his insurance settlement was based on the

A Messy Situation

depreciated cost of his carpets and damaged equipment.

Dr. Smith wondered if his CDIP Comprehensive General Liability coverage could make up the difference between Dr. Shaw's loss and his insurance settlement, since the damage originated from a leak in his office. Unfortunately, for Dr. Shaw, this was not possible. He had to claim under his insurance policy and, if they chose to, his insurers could make a claim under Dr. Smith's Comprehensive General Liability policy.

There are two main lessons to be learned from this "messy situation". First is the old story of prevention: had Dr. Smith repaired his solenoid switch as soon as he was aware of the problem, the situation would likely not have arisen. Second is the need for everyone to have adequate insurance. This story illustrates the point that even if the damage to your office is caused by someone else, your insurance must be adequate to cover any loss you may have.

Methods of Valuation

Adequate insurance encompasses both amount and type of coverage. Dr. Jones and Dr. Smith both had high enough limits of insurance to cover their potential losses, and Dr. Shaw may also have had sufficient coverage. The difference was that Dr. Jones and Dr. Smith also had replacement cost coverage (all CDIP Office Contents Insurance covers replacement cost), while Dr. Shaw did not, leading to his dissatisfaction with the settlement of his claim.

All dental equipment, furniture, leasehold improvements and other contents of your dental office can be valued in three ways.

1. You can determine the value based on the sum *you paid for them*.
2. *Current value* is another method of



establishing the value — this is the price someone would be willing to pay you to purchase a specific piece of your equipment or furniture.

3. *Replacement cost value* is the most important method of valuation because in the event of a loss it represents the true cost of that loss. It is the cost of replacing all your equipment, furniture, etc. at today's dollars.

CDIP Office Contents Insurance provides for "Replacement Cost", but not all policies available from private brokers do. As illustrated by the actual claim discussed here, it is important to carry sufficient insurance to cover the maximum **replacement cost value** of equipment, furnishings and leasehold improvements; otherwise you may have to make up the difference out of your own pocket.

Valuing Your Office Contents

If you are unsure of how to go about calculating this replacement cost value, we offer you the following suggestions:

1. Do a complete inventory of your office — room by room.
2. Take the time to research the cost of replacing each item at today's prices. Dental supply houses can be of assistance.
3. Do not underestimate the replacement cost of leasehold improvements. Remember that plumbers, electricians and construction people get more for their services today than they did a few years ago.
4. Check the total replacement cost needed against the amount of insurance you carry.
5. If you carry less insurance than is needed to replace all the contents of your office, consider calling CDSPI for an application to increase your Office Contents Insurance coverage. Do it immediately — good intentions will remain good intentions if you do suffer a loss.
6. Call CDSPI to receive your free copy of an informative "Office Contents Inventory and Valuation" folder which will assist you in determining your replacement cost value.

Be sure to review your office contents coverage each year as prices do increase and so will your replacement cost value.

If you need more information, call your service organization — CDSPI — today! △

* The names have been changed to protect the confidentiality of those involved.

Dental Implants

Les implants dentaires

1. Akagawa, Y. and others. "Attitudes of removable denture patients toward dental implants." *Journal of Prosthetic Dentistry*. Sept. 1988, v. 60, no. 3, pp. 362-4.
2. Babbush, C.A. "Statement of the American Association of Oral and Maxillofacial Surgeons." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 768-9.
3. Baily, J.H., Yanase, R.T. and Bodine, R.L. "The mandibular subperiosteal implant denture: a fourteen-year study." *Journal of Prosthetic Dentistry*. Sept. 1988, v. 60, no. 3, pp. 358-61.
4. Bolender, C.L. "Indications and contraindications for different types of implant therapy." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 757-9.
5. Bränemark, P.I. "Tooth replacement by oral endoprostheses: clinical aspects." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 821-3.
6. Brunski, J.B. "Biomaterials and biomechanics." *Journal of the California Dental Association*. Jan. 1988, v. 16, no. 1, pp. 66-77.
7. Dubruille, J.H. and Dubruille, M.T. [Reflections on implantology.] *Actualités Odontostomatologiques*. Dec. 1987, v. 41, no. 160 Spec No. 00, pp. 796. . .
8. Falomo, O.O. and Hobkirk, J.A. "A retrospective survey of patients treated with subperiosteal and endosseous implants." *Journal of Prosthetic Dentistry*. Nov. 1988, v. 60, no. 5, pp. 587-90.
9. Hartley, M. "Implants create a new breed." *Dentist*. May-Jun. 1988, v. 66, no. 3, pp. 23-4.
10. Heller, A.L. "Blade implants." *Journal of the California Dental Association*. Jan. 1988, v. 16, no. 1, pp. 78-86.
11. Homoly, P. "Thin ridge implants require versatility for placement." *Dentist*. Sept.-Oct. 1987, v. 65, no. 6, pp. 19. . .
12. "Implants." *RDH*. Jan.-Feb. 1988, v. 8, no. 1, pp. 30, 32-4. . .
13. James, R.A. and others. "Subperiosteal implants." *Journal of the California Dental Association*. Jan. 1988, v. 16, no. 1, pp. 10-4.

14. Masters, D.H. "Bone and bone substitutes." *Journal of the California Dental Association*. Jan. 1988, v. 16, no. 1, pp. 56-65.
15. Matukas, V.J. "Medical risks associated with dental implants." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 745-7.
16. McKinney, R.V. Jr. and others. "The scientific basis for dental implant therapy." [Review] Dec. *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 696-705.
17. Meffert, R.M. "The soft tissue interface in dental implantology." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 810-1.
18. Murakami, H. and others. "Element solubility from dental implants." *Dental Materials Journal*. Dec. 1986, v. 5, no. 2, pp. 172-7.
19. "National Institutes of Health Consensus Development Conference statement on dental implants June 13-15, 1988." [Review article]. *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 824-7.
20. Pasquet, G. and Cavezian, R. ["Pre-implant radiologic survey: current techniques and trends."] *Actualités Odontostomatologiques*. Dec. 1987, v. 41, no. 160, pp. 777-85.
21. Reed, G.M. "Advanced subperiosteal procedures. Pterygoid extension subperiosteal implant. A case report." *Journal of the Houston District Dental Society*. Apr. 1988, pp. 7-10.
22. Reed, G.M. Advanced subperiosteal procedures. A case report — tripodial subperiosteal." *Journal of the Houston District Dental Society*. Feb. 1988, pp. 5-7.
23. Reed, G.M. "Implant trouble shooting — the problem side." *Journal of the Houston District Dental Society*. May 1988, pp. 5-7.
24. Reed, G.M. "Unilateral subperiosteal implant. A case report." *Journal of the Houston District Dental Society*. Jan. 1988, pp. 4-6.
25. [Round table on implantology in 1987.] *Actualités Odontostomatologiques*. Dec. 1987, v. 41, no. 160, pp. 797-827.
26. Sheppard, G.A. "Implant litigation." *Journal of the California Dental Association*. Jan. 1988, v. 16, no. 1, pp. 49.
27. Shulman, L.B. "Surgical considerations in implant dentistry." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 712-20.

28. Shuken, R. "Implants in hospital settings offer advantages for dentists." *Dentist*. Jul.-Aug. 1988, v. 66, no. 4, pp. 35-6.
29. Smith, D.C. "Future directions for research on materials and design of dental implants." *Journal of Dental Education*. Dec. 1988, v. 52, no. 12, pp. 815-20.
30. Stieg, R.C. "Medical implant coverage adds twist to filing claims." *Dentist*. Sept.-Oct. 1987, v. 65, no. 6, pp. 23.
31. Symington, J.M. "Dental implants: surgical considerations." *University of Toronto Dental Journal*. Spring 1988, v. 1, no. 2, pp. 17-22.

One copy of the above package of articles is available for \$5.00 to all CDA members and for \$10.00 to non-members. (Ontario residents, please include 8% sales tax.)

LIBRARY SERVICES

As a convenience to all CDA members in the various time zones in Canada, it is now possible to call the CDA Library, between 4:30 pm and 8:30 am Ottawa time, in addition to during regular library hours (8:30-4:30 EST)

After hours: (613) 523-5482
Daily: 1-800-267-6354 (Western Canada and area code 709)
1-800-267-6364 (Eastern Canada excluding area code 709)
Envoy: CDN.DENTAL.LIB
FAX: 613-523-7736

Les membres de l'ADC peuvent obtenir pour 5\$ et les non membres pour 10\$ une copie des articles de la bibliographie ci-dessus.

SERVICES DE BIBLIOTHÈQUE

Pour mieux servir les membres de l'ADC habitant dans les différentes zones horaires du Canada, la Bibliothèque de l'ADC dispose maintenant d'un service téléphonique de 16h30 à 8h30, heure d'Ottawa, en plus des heures ordinaires (de 8h30 à 16h30, HNE).

En dehors des heures ordinaires:
(613) 523-5482

Aux heures ordinaires:
1-800-267-6354 (l'Ouest du Canada et la région dont le code est 709)
1-800-267-6364 (l'Est du Canada, sauf la région dont le code est 709)

Programme informatique
Envoy: CDN.DENTAL.LIB
FAX: (613) 523-7736

Vancouver 1989: Convention Countdown



Be there!

*Dr. Michel Jahjah,
General Chairman
CDA Conventions*



Vancouver's Trade and Convention Centre (Photo: First Image Productions, Vancouver B.C.)

Vancouver 1989

Dental Assistants

CDAA

Scientific Program

Registration to the convention gives access to the entire scientific program. In addition, the following is the CDAA scientific program. Social events are open to all by purchasing the appropriate ticket.

Monday, August 28

8:30 a.m. - 11:00 a.m.

Round Table Forum, topics to include:

- ethics and importance of proper dental charting
- asepsis of handpieces
- rubber dam placement
- pit and fissure sealants
- impression materials

1:30 p.m. - 4:00 p.m.

Claudia Anderson

"The Art of Caring for Patients Professionally"

Using personality profiles to define your own style.

Wednesday, August 30

8:30 a.m. - 11:00 a.m.

Panel Discussion with Arlene Gladstone and Li Bolson

"Stress, Success and Excellence"

Work vs. home, present and ongoing challenges for women of the 80's and 90's

Dental Hygienists

Scientific Program

in Collaboration with the BCDHA

Registration to the convention gives access to the entire scientific program. The following is an outline of the scientific program which is of special interest to dental hygienists. Social events are open to all by purchasing the appropriate ticket.

Monday, August 28

8:30 a.m. - 11:00 a.m.

Dr. Dale Miles

Director, Graduate Program
School of Dentistry, Indiana University

"Radiology
- concepts for the '90s"

1:30 p.m. - 4:00 p.m.

Dr. Crawford Bain

Assistant Professor of Periodontics
Dalhousie University

"Periodontal Update"

Tuesday, August 29

8:30 a.m. - 11:00 a.m.

Dr. Joel Epstein

Division of Dentistry
Cancer Control Agency of British Columbia

"Periodontal and Gingival Involvement
in Medically Compromised Patients"

Allan Fotheringham

Tuesday, August 29

1:00 p.m. to 2:00 p.m.

OPEN TO ALL

The 1989 edition of the Murray McDonald Memorial Lecture, sponsored by the Canadian Fund for Dental Education will feature an address by Mr. Allan Fotheringham.

Canada's best-read political columnist, three-time

bestselling author, panelist on CBC TV's **Front Page Challenge**, Mr. Fotheringham is a columnist for **The Financial Post** and weekly columnist for **Maclean's**.

Consistently witty and controversial, don't miss his update of politics and issues in Ottawa and Washington.

Vancouver 1989

Pre-Convention (Limited Attendance Courses)

August 26-27



Dr. Ronald E. Jordan
Winnipeg, Manitoba

Dr. Jordan is the Dean of the Faculty of Dentistry at the University of Manitoba and a well-known international lecturer.

"Clinical Update on Esthetic Composite Bonding: Techniques and Materials"

This course will deal specifically with update information on several important areas of general practice dentistry:

- Anterior Composite Materials
- Dentin Bonding Agents
- Posterior Composite Restorations
- Conservative Treatment of Discoloured and Malformed Dentitions



Ms Linda Miles
Virginia Beach, Virginia

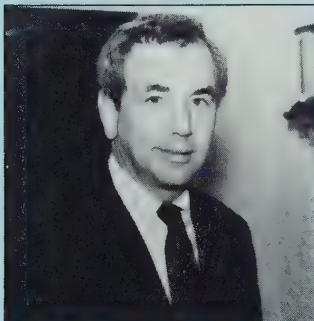
Nationally recognized consultant, speaker and author on practice management and "team building". Owner of Dental Dynamics, Inc. and founder of the Dental Dynamics Institute.

"Dynamic Practice Management"

- Set the Stage for Case Acceptance
- Dental Insurance
- Inventory Control Systems
- The 3 Rs of Motivation/Incentives
- How to Attract and Keep New Patients - Marketing Tips
- Attract and Hire a Motivated Staff
- Dress for Success - Doctors and Staff

Pre-Convention (Hands-on Courses)

August 26-27



Dr. Irvin A. Roseman
Wilmington, North Carolina

Dr. Roseman has several national publications and has lectured extensively on endodontics throughout the United States. Dr. Roseman was a part-time Clinical Instructor at the UNC School of Dentistry and the University of Detroit.

"A Better Prognosis Throught Organized Endodontics"

Endodontics is the result of careful planning and meticulous application of scientific principles related to diagnosis, preparation and obturation of the root canal. This seminar brings to the practitioner the principles necessary to perform predictable and effective endodontic therapy. Through step-by-step procedures, illustrations and case presentations, the participants will easily be able to incorporate these techniques profitably and efficiently into their practice.



Dr. Michael Goldfogel
Englewood, Colorado

Dr. Goldfogel maintains a private practice and is special clinical instructor at the University of Colorado Dental School. He has lectured to university and professional audiences throughout the United States and Canada.

"Advanced Clinical Concepts.

A Technique Approach to Restorative and Esthetic Dentistry"

Presented as a lecture and hands-on course, this seminar is totally technique oriented for the practitioner performing advanced modern restorative dentistry. The focus of the program deals extensively with discussion of clinical techniques for anterior and posterior esthetic and functional restorations. The most up-to-date anterior and posterior restorations under guidance of practicing dentists will be performed.

Vancouver 1989

Convention Program

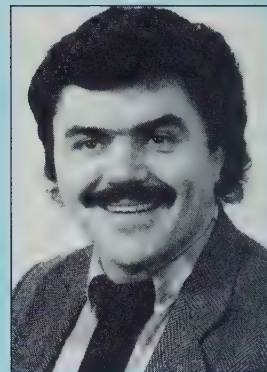
Some of the Speakers Appearing from August 28-30



Paul Robertson D.D.S., M.S.
Vancouver, British Columbia
Periodontics



Crawford Bain D.D.S., M.Sc.
Halifax, Nova Scotia
Periodontics



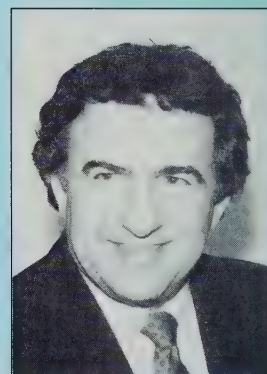
William McDonald D.M.D., M.D.
Vancouver, British Columbia
Medical Emergencies



Gary Gibson D.D.S.
Vancouver, British Columbia
Hospital Geriatric Dentistry



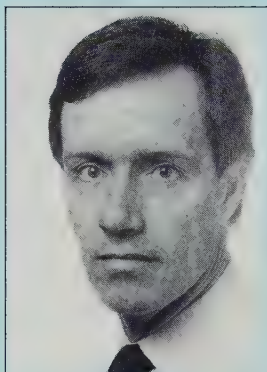
Richard Tucker D.D.S.
Ferndale, Washington
Fixed Prosthodontics



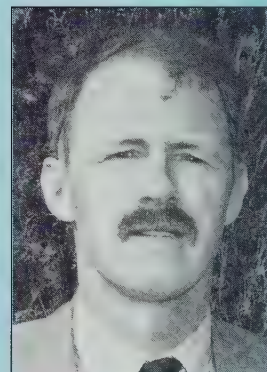
Ken Neuman D.M.D.
Vancouver, British Columbia
Imaging



Graham Matheson D.M.D.
Vancouver, British Columbia
Removable / Fixed Prosthodontics



Chris Clark D.D.S., M.P.H.
Vancouver, British Columbia
Ethics



Larry Cheevers D.D.S.
Vancouver, British Columbia
Forensic Dentistry

Vancouver 1989

Convention Program

Also on the Program:

Jennifer de St. Georges
Monte Sereno, California
Practice Management

Tom Snyder D.M.D., M.B.A.
Cherry Hill, New Jersey
Computers

Terry D. Myers D.D.S.
Walled Lake, Michigan
Lasers

Pierre Boudrias D.D.S., M.S.D.
Montréal, Québec
"Prosthodontic Applications
using Osseointegrated Implants"

Ernie Ambrose D.D.S.
Saskatoon, Saskatchewan
Restorative

Kenneth L. Zakariasen
D.D.S., M.S.S., Ph.D.
Halifax, Nova Scotia
Endodontics

Perry V. Goldberg D.D.S., M.S.D.
&
Marvin Werbitt, D.D.S., D.Sc.D.
Montréal, Québec
"Integrating Osseointegration into
Comprehensive Dental Treatment."
"Surgical and Periodontal
Considerations, and Restorative
and Esthetic Considerations"

David R. Frederick D.M.D., M.Sc.D.
Marina Del Rey, California
"Advances in Materials and Concepts
to Restore a Decimated Dentition"
&
"Master the Art and Science of
Crown & Bridge Temporization"

Joel Epstein D.M.D., M.S.D.
Vancouver, British Columbia
"Periodontal and Gingival
Involvement in
Medically Compromised Patients"
&
"HIV and AIDS:
The Role of the Dental Team"

John Molinari B.A., Ph.D.
Detroit, Michigan
"Infectious Disease and the Challenge
of Infection Control"
&
"Hepatitis and AIDS: Clinical Update
and Dental Considerations"

Fred Weinstein D.M.D.
Vancouver, British Columbia
"Bleaching, Vital and Non-Vital"
&
"A New Era in Obturation:
(a) Injectable Thermoplastic,
Gutta Percha"

Dale Miles D.D.S., M.S.
Indianapolis, Indiana
"Radiology for Dental Hygienists
– Concepts for the '90s"
&
"The Problem-Oriented Patient
– Your Problem or Theirs?"

Gilles Lavigne D.D.S., M.S.D.
Montréal, Québec
Pain

Ian Vogan D.D.S.
Halifax, Nova Scotia
"Coping with Success"

In addition:

A whole day workshop presented by members of
the Canadian Academy of Oral Radiology
"Principles and Practice of Oral Radiologic Interpretation"

C.G. Baker D.M.D., M.Sc.
University of Alberta

M.J. Pharoah D.D.S., M.Sc.
University of Toronto

A. Ruprecht D.D.S., M.Sc.D.
University of Iowa

D.C. Hatcher D.D.S., M.Sc.
Sacramento, California

C. Price B.D.S., F.D.S.R.C.S., M.D.S.
University of British Columbia

D.W. Stoneman D.D.S.
University of Toronto

Vancouver Trade & Convention Centre ■ August 26 - 30, 1989

With the new computerized registration system, it is *essential* that each registrant fill out a separate form. Photocopy the form for more than one registration. Advance registrations will be accepted until *July 17, 1989* after which they will be returned to the sender. Each on-site registration will be subject to a \$25.00 administrative fee. Please print.

Sex:

(Street) (City) (Province)

()
(Residence)

CDA Membership or License Number:

SATURDAY, AUGUST 26

150.00	150.00
50.00	50.00
175.00	175.00

Ms Linda Miles – PRACTICE MANAGEMENT – Lecture

DENTIST

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

DENTAL HYGIENIST

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

CDAA Member	\$ 60.00
Non-member	\$ 90.00

60.00	_____
90.00	_____

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

TECHNICIAN

TECHNICIAN	60.00
------------	-------

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

OFFICE PERSONNEL

OFFICE PERSONNEL	\$ 60.00
<i>Includes:</i> Scientific sessions, exhibits, Sunday Opening Ceremony	

STUDENT

STUDENT _____ Nil

☐ Dentist ☐ Hygienist ☐ Dental Assistant

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

ACCOMPANYING PERSON/SPOUSE

ACCOMPANYING PERSON/SPOUSE \$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony and Spouses' Program including two luncheons.

CHILD

CHILD	40.00
-------	-------

Includes: Access to convention, Sunday Opening Ceremony and Children's Program including two box lunches and Carnival Night.

SOCIAL EVENTS

Sunday • Opening Ceremony – 5:00 – 7:00 p.m. (Incl. in registration) Nil

Will attend ☐ Yes ☐ No

Sunday • Carnival Night – 7:00 - 11:00 p.m.
(following Opening Ceremony) per person

Monday • "Black & White" Evening (per person) \$ 40.00

TOTAL\$

The above registration fees are paid by

IMPORTANT:

Please make cheque payable to: **Canadian Dental Association**
and mail to: **1989 CDA Convention**

No post-dated cheques,
please.

Cancellation Policy:

- Cancellations received on or before July 17, 1989 – full refund
- Cancellations after July 17, 1989 – subject to a 25% administrative charge
- No refund after August 10, 1989

Dentists registering by July 17, 1989 will be eligible to win two tickets anywhere Air Canada flies in Europe and North America!

Vancouver 1989

How to register for the CDA Convention

Filling out Your Registration Form

1. Register early, some courses have limited attendance.
2. There is only one registration form to be used by all categories of participants.
3. Use one form per person (photocopy for several registrants).
4. Spouses and children should have a separate form for each individual.
5. Total the dollar amount of activities and courses you plan to attend, and make cheque payable to the Canadian Dental Association.
6. If your cheque covers the cost for several registrants, your name or company name should be clearly indicated in the appropriate space on each registration form.
7. Dental assistants and dental hygienists should fill out a separate form for each individual.
8. If hotel accommodation is needed, fill out the hotel reservation form.
9. If travel arrangements are needed, call Air Canada Convention Central for the best rates and services.

Filling out Your Hotel Reservation Form

1. Reserve early. August is a very busy month in Vancouver. We have negotiated for you the best rates possible at many of Vancouver's luxury hotels, but hotel rooms are limited in number.
2. CDA is handling the hotel reservations in house, so you will not be able to reserve directly with the hotel.
3. Use one reservation form per room.
4. Your reservation will be confirmed by the hotel.
5. To guarantee your room for late arrival, you must pay your first night deposit directly to the hotel.
6. Any further changes to reservations should be made through CDA headquarters.

Making your Airline Reservations

Air Canada has been appointed the sole official carrier for the Canadian Dental Association 1989 Annual Convention in Vancouver. Special arrangements have been made with Air Canada to offer convention participants discounts on air fares. To take advantage of this service, you must call Air Canada's Convention Central when booking your tickets (your travel agent can call on your behalf). Dial **1-800-361-7585**. The Convention Central hotlines are open **weekdays, 9:00 a.m. to 5:00 p.m. EST/EDT**. Identify yourself and the CDA convention. Air Canada's convention experts will do the rest. The lowest fare available will be confirmed to you, subject to availability and advance purchase conditions.

Fly Canada's #1 Convention Airline to the 1989 CDA Convention in Vancouver, and SAVE. Through Convention Central, you also have the opportunity to save on car rentals. Ask for details when booking your flight. The Convention Central staff are eager to help in any way.

Not to be overlooked, Air Canada has graciously offered two tickets for any destination it services in North America or Europe as the prize in our advance registration draw. To be eligible for the draw, you must register for the convention before July 17.

1989 CANADIAN DENTAL ASSOCIATION CONVENTION

August 26 - 30, 1989 ■ Vancouver Trade & Convention Centre

Vancouver, British Columbia



Hotel Reservation Form

Please check appropriate category:

☐ Dentist ☐ Hygienist ☐ Assistant ☐ Exhibitor ☐ Office Personnel ☐ Other (please specify) _____

Name: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Telephone: () ()
(Res.) (Office)

Type of Room

☐ Single ☐ Double ☐ Twin ☐ Other (please specify) _____

Indicate first three hotel choices (by numbering the boxes):

- | | |
|--|-----------------------------------|
| ☐ Pan Pacific (CDA Headquarters) | \$149.00 single / double |
| ☐ Four Seasons (CDA Headquarters) | \$135.00 single / double |
| ☐ Hyatt Regency | \$135.00 single / double |
| ☐ Hotel Vancouver | \$130.00 single / double |
| ☐ Sheraton Landmark | \$110.00 single / double |
| ☐ Hotel Georgia (CDAA Headquarters) | \$ 99.00 single / double |
| ☐ New World Harbourside | \$ 95.00 single / \$105.00 double |

Arrival Date: _____

Departure Date: _____

Arrival Time: _____

Your reservations will be confirmed to you directly by the hotel. This reservation is guaranteed only **until 6:00 p.m.**
Information for guarantees after 6:00 p.m. will be provided with the confirmation from the hotel.
Any future changes to the reservation should be made through the Canadian Dental Association.

Send Reservation Form to:

CDA Convention
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

DO NOT send a deposit with this Reservation

DEADLINE for Reservations: July 17, 1989

Vancouver 1989

Social Program

Sunday, August 27

Opening Ceremony

5:00 p.m. to 7:00 p.m.

A new feature at the CDA Convention. A two hour extravaganza packed with some of the best talent Vancouver has to offer. Dancing and entertainment centering on the theme of cultural diversity. More than 200 entertainers, dancers, musicians,

and support staff. The show promises to have something for all tastes. The Grand Finale will be a musical review by *Leon Bibb* and *Friends*. This Opening Ceremony is included in your registration and is open to all.

Carnival Night

7:00 p.m. to 10:30 p.m.

Immediately following the Opening Ceremony, carry over the festive mood to an evening themed around an amusement park with games, prizes and music for families; singles; adults and children. Open to all categories of registrants. If weather permits, it will be held outdoors at the Convention Centre. Otherwise, the

ballroom will be decorated to hold the event. Tickets are \$10.00 for adults which includes access to the games at no charge (limited plays per person). For children, this event is included in their registration fee. Your favourite "junk" food will be on sale at concessions all around the "CDA Convention Amusement Park".

Monday, August 28

Black and White Evening

7:00 p.m. to 8:00 p.m. ■ cocktails

8:00 p.m. - 12:00 a.m. ■ dinner and dance

A dramatic evening themed in black and white. Cocktails, fine dining, dancing to the sounds of two bands – a big band swing orchestra and a contemporary band. Top hats, streamers, champagne, confetti; from the menu to the decor, the Black and

White theme will be all around you. But don't let the dilemma of what to wear discourage you. Black tie is optional. Don't be afraid to be creative with your black and white wardrobe, and be sure not to miss the "Swingingest" ticket in Vancouver!

Spouses' Program

Monday, August 28

- Lecture on Breast Cancer by Dr. Joanne Emerman
- Lecture on Plastic and Cosmetic Surgery by Dr. Richard Warren
- Lunch at the scenic Prow Restaurant

Tuesday, August 29

- Sea Bus to Shopping at Lonsdale Quay
- Lunch at Loops Restaurant in the Lonsdale Quay Hotel

Wednesday, August 30

- Coffee and Muffins
- "Your Lifestyle, Your Choice. How Healthy are you?" by the Fitness Group in Vancouver

Every morning aerobics session from 7:00 a.m. to 8:00 a.m.

Children's Program

Highlights for Monday, August 28

- Science Fair
- IMAX Theatre
- Lunch

Highlights for Tuesday, August 29

- Vancouver Aquarium
- H.R. MacMillan Planetarium
- Lunch

Your children aged five years and over are sure to find this two day program both informative and entertaining. Younger children are also welcome, but must be accompanied by an adult registered in the program.

Also, registration gives access to the Opening Ceremony and Carnival Night.

Watch for the June issue of the CDA Journal for full coverage and itineraries for both the Spouses' and Children's Programs.



AMSTERDAM • SEPTEMBER 2-8, 1989

**FÉDÉRATION DENTAIRE
INTERNATIONAL MEMBERSHIP**

In September 1989, the FDI World Congress will take place in Amsterdam, The Netherlands. Registrants to the congress must be supporting members of the Federation. *To be eligible for supporting membership, canadian dentists must be members of the Canadian Dental Association.*

Your membership fee is your contribution in support of FDI and its efforts to promote improved dental health on a worldwide basis. The subscription fee is \$40 or, in combination with a subscription to the International Dental Journal, \$90. All FDI member fees collected by CDA are forwarded to FDI's headquarters in London, England. The fee includes a small administrative fee levied by CDA to cover administrative costs and foreign exchange.

Please fill in, clip out and forward the bottom of this page to us (or forward the necessary information in a letter) and we will register you as a FDI supporter.

**ADHÉSION À LA FÉDÉRATION
DENTAIRE INTERNATIONALE**

En septembre 1989, le Congrès mondial de la FDI se tiendra à Amsterdam, les Pays-bas. Les personnes désireuses d'y participer doivent être membres de soutien de cette Fédération. *Pour être admissibles comme membres de soutien, les dentistes canadiens doivent être membres de l'Association dentaire canadienne.*

Par votre cotisation, vous appuyez la FDI et ses efforts pour améliorer la santé dentaire à l'échelle mondiale. Les frais de cotisation sont de \$40 ou de \$90 si l'on désire en plus s'abonner au Journal dentaire international. Les frais d'envoi en devises américaines, ainsi que les frais d'administration encourus par l'ADC, sont couverts par ce montant.

Nous vous invitons donc à remplir, détacher et nous faire parvenir le formulaire ci-dessous (ou une lettre indiquant l'information requise) et nous vous compterons parmi les membres de soutien de la FDI.

**MEMBERSHIP APPLICATION
FÉDÉRATION DENTAIRE
INTERNATIONALE**

Please register me as a supporting member of the Fédération Dentaire Internationale. I understand that for:

- \$40 — I will be registered as a supporting member of FDI and will receive a membership card and the Quarterly FDI newsletter.
- \$90 — I will be registered as a supporting member of FDI and will receive a membership card, the Quarterly FDI newsletter and a subscription to the International Dental Journal.

**DEMANDE D'ADHÉSION —
FÉDÉRATION DENTAIRE
INTERNATIONALE**

Veuillez s'il vous plaît me considérer comme membre de soutien de la Fédération dentaire internationale. Je comprends bien que pour:

- \$40 — Je deviendrai membre de soutien de la FDI et que je recevrai une carte de membre et le bulletin trimestriel de la FDI.
- \$90 — Je deviendrai membre de soutien de la FDI, je recevrai une carte de membre, le bulletin trimestriel de la FDI ainsi qu'un abonnement au Journal dentaire international.

**CANADIAN DENTAL ASSOCIATION
L'ASSOCIATION DENTAIRE CANADIENNE
1815 ALTA VISTA, OTTAWA, ONTARIO K1G 3Y6**

NAME/NOM: _____

ADDRESS/ADRESSE: _____

CDA MEMBER NUMBER/NUMÉRO DE CARTE DE MEMBRE DE L'ADC: _____

PLEASE SEND ME MORE INFORMATION ON FDI/
VEUILLEZ M'ENVOYER DE PLUS AMPLES RENSEIGNEMENTS



'Smooth transition to Metropolitan Life'



CANADIAN DENTAL ASSOCIATION / L'ASSOCIATION DENTAIRE CANADIENNE

Dear Colleague:

You will recall my correspondence with you in the Fall of 1988, concerning CDA's decision to choose Metropolitan Life as its carrier of the Canadian Dentists' Insurance Plans (CDIP).

This decision was not an easy one to reach since Metropolitan Life, the only realistic choice available to us, was a provider of capitation-type dental plans through its equity position in Future Focus. We were certain, however, that Metropolitan Life would, in due course, realize that a long-term relationship with Canadian dentistry would outweigh the value of an investment position in a capitation delivery system.

The attached letter from Mr. Al Bates, President of Metropolitan Life confirms our judgement. You will see that the enrolment picture is positive, and that Metropolitan Life has "chosen to divest ourselves of our equity position in Future Focus and have no present plans to re-enter this market".

In summary, the plans are healthy, the administrative cooperation has been excellent between CDSPI and Metropolitan Life, and dentistry controls its own house. The bonus in all of this of course, is that the profession can claim another victory over capitation, and from within.

Jack W. Niedermayer, BA, DDS
President



Metropolitan
The Metropolitan Group

I have just received a report on the progress of the C.D.I.P. and thought it an appropriate time to write to both of you. Our numbers indicate enrolments exceeding 95% of prior coverage, and our administration area reports excellent progress on the processing and issuing of individual policies. I would like to personally thank each of you, as well as the organizations you represent, in assisting in the smooth transition of your insurance plan to Metropolitan Life.

An item that is probably of interest to your respective memberships is the status of our involvement in Future Focus. During your selection process for a new insurance carrier, I had mentioned that Metropolitan was reviewing the financial impacts of our participation in this area. As a result of the analysis, we have chosen to divest ourselves of our equity position in Future Focus, and have no present plans to re-enter this market.

Once again, thank you for your cooperation and assistance. I look forward to a long and mutually beneficial relationship.

A.E. Bates
President and Chief Executive Officer

Canadian dentists in China

I was interested in the article on the Canadian Dentists who contributed so generously of their life efforts in China.

My mother and Mrs. Agnew who are both still alive were surprised that their husbands who had been in China 35 and 30 years respectively got so little mention in the article. I'm glad you did such a good job on Doctors Lindsay, Thompson and Campbell.

For your information, I'd like to give you a thumb sketch of Dad's service to China and the dental profession there.

Dad and Mother went to Chengtu in 1917. He had been asked by the Dental Faculty at Toronto, on graduation, to stay on as a full time staff member but went to China instead. Except for three short furloughs home to Canada his life was in China teaching. In '34 he received his BSc from Toronto and was made an honorary member of the American College of Dentists in '41. Unfortunately on returning to China in the fall of '41 he was caught and interned by the Japanese in Hong Kong and spent two years in a prisoner of war camp before being repatriated in the fall of '43. He returned to China in '45 via Burma and the Hump to Chengtu and stayed till late '51 when the Communists finally allowed my parents to leave China. He was asked by the Communists if he would stay and teach

but decided distant fields looked greener. On returning to Toronto, Dad was asked again if he would join the Dental Faculty staff and this time he accepted.

He was on staff eight years during the transition period from the old building to the new facility. Mother taught English during her years in China and their home was an open house for the Chinese students. A letter received by Mother at the time of Dad's death from one of his Chinese students made their years in China most worthwhile. The letter ended by saying "We respected our Canadian teachers but Dr. Mullett we loved."

As a footnote I myself went back to China immediately after the War and taught in the Dental school for one and a half years before going to Shanghai. Enlarging on Dr. Campbell's comment on fluoride — near Chengtu there was area with a very high concentration of fluoride in the drinking water and as a consequence the people died relatively young from fluoride poisoning. A number of skeletons were brought to the University for examination. The teeth were heavily mottled, the bone structure was enlarged, dense and heavily spiculated. I have quite a few pictures of skeletons and individual bone which I took while I was there in '47.

J.H. Mullett, DDS
Toronto, Ontario.

D.I.D. article

As one of the representatives from Saskatchewan who attended the Dialogue in Dentistry Workshop in Edmonton, I must commend you on your excellent article in the February issue of the CDA Journal.

I found it to be very informative and I hope it will go a long way in letting members of our profession know what the problems are, and what can be done to help solve them, so that we may continue to provide quality care to our patients in the years to come.

Dr. John Criton,
Regina, Saskatchewan.

'Thorough exposé'

Thank you very much for your thorough exposé of the DID training program printed in the February Journal. You highlighted the issues most effectively and this exposure, hopefully will stimulate further interest nation wide.

Lawrence P. Rossoff, DDS
Vancouver, BC.

Editor's Note:

The Journal is red-faced and embarrassed! Throughout the "Dialogue in Dentistry" article we misspelt Dr. Rossoff's name. We sincerely apologize.

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HUNGARY, 1981-84: Xylitol VS. Fluoride

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MICHIGAN, 1988: Reduction in Plaque

Three groups of students chewed 10 pieces of gum each per day, sweetened with xylitol, sorbitol or a xylitol/sorbitol mixture respectively. Two weeks later, the xylitol and xylitol/sorbitol groups showed a decrease in plaque from baseline values; the sorbitol group showed an increase.

FR. POLYNESIA, 1981-84: Sugar Substitution

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did not contain xylitol.

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*Spearment flavour does not contain xylitol.
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Practice Prosperity 1989

Part Five:

The Power Of Professional Service

A personal point of view:

When I graduated from dental hygiene in 1965 and married a dentist, I had no idea of the complexities involved in becoming prosperous and then maintaining that prosperity in order to be productive in an ever-changing marketplace. I quite often admit to the fact that it didn't take as much talent or skill to be successful as a new graduate in 1965 as it does today. Our market was much greater, consumers were less demanding and preventive dentistry had just begun to impact treatment planning. We literally hung up our credentials and went to work.

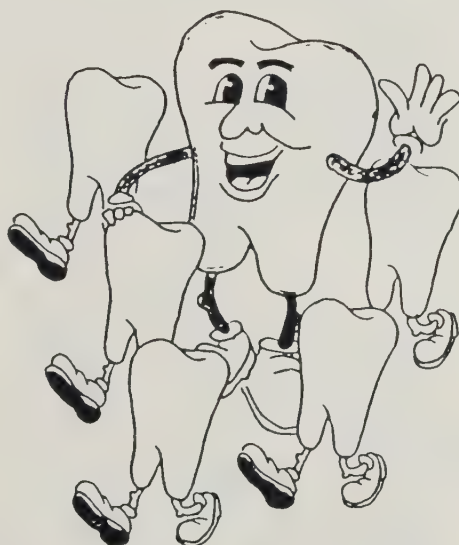


Over the years my husband, Judd and I have been involved in the profession of dentistry as part of our own personal mission. We are very different in personality as are many dental couples we meet. However, we have common goals which allow us to be "two individual people looking in the same direction together". We believe that the power of long term prosperity exists in people; in ourselves, as leaders and in our staff, as team. I del-



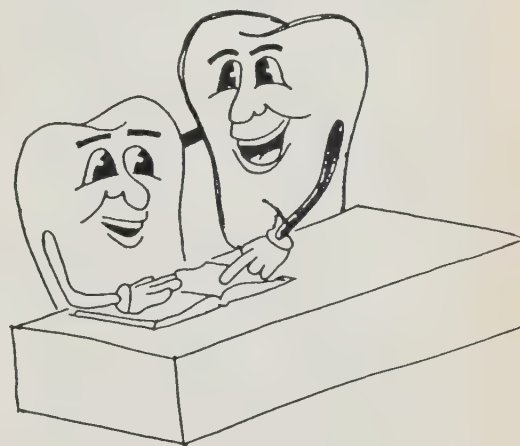
Claudia Anderson, RDH

egate more naturally than Judd because it meets my need to influence my world positively and is in keeping with my value for democratic involvement. I'm very much a marketer with a backup tendency for concern about the key issues and quality control.

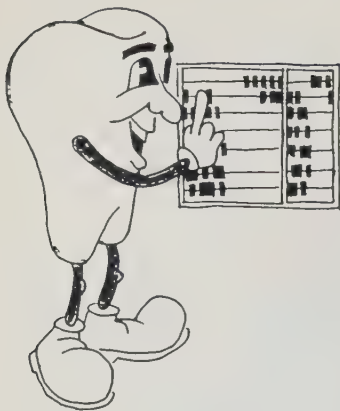


Judd, on the other hand, is more traditional and results-oriented. He judges himself successful when his team is pulling together to achieve measurable and tangible goals. His value is for team work, and he sets the pace to match his need for achievement. He is a developer who backs up his entrepreneurial drive with technical expertise as the number one producer in the office.

Our team consists of people who are very different from Judd and I. Judd works with three certified dental assistants who complement him extremely well. They are all more stabilizing and counselling by nature and they take the time with patients to listen to concerns and develop professional relationships. When its 5:00 pm and the crown isn't seating properly, Judd needs his team to support him and to work through the problems of delivering the best quality dentistry with care and concern for the patient. As we all know, this takes everyone pulling together, even at the best of times.



Our two receptionists are also very different from each other. To deliver professional service, we have one receptionist who concentrates on the day-to-day finances, insurance processing and accounts receivable. She is great at it! The other receptionist, is more effective and happier talking to people, solving the human problems, marketing, following up on the recall program and confirming appointments. Together they offer total service and with cross training, they can



do each other's jobs when necessary as they consult with each other.

Our hygienist is the maintainer of long term people relationships and quality dentistry. She's ideal for our practice and we're very pleased to have her with us.

Professional service is not about slogans, memorized sales pitches and insincere responses. Professional service is about people doing what they do best with the patient in mind. In dentistry, there are both internal service and external service needs. Internal service occurs when a team member serves another who is serving a patient. For example, the assistant puts the hygienist's instruments through the autoclave because she is running behind or Judd develops a set of bite-wings while the assistants are cleaning up.

External service is service directed toward the patient in a one-to-one relationship or through external marketing.

Both types of service work together. Without one, the other cannot exist. Paraphrased from Jan Carlson — President, Scandinavian Airlines: ***"If you are not serving the patient, you'd better be serving someone who is"***.

From Philip Forest's book "Sold On Service", the four ingredients that contribute to professional service are:

1. Awareness of how we affect the quality of patient care through our own actions, who we are and how we use our customer service styles.
2. Technical skills (i.e.: knowledge of procedures, communication skills).
3. Behavioral skills (effectively responding to patient expectations and problems while adapting our style to meet their needs).
4. Teamwork (how WE can be "better together" in providing professional care, than as individuals).

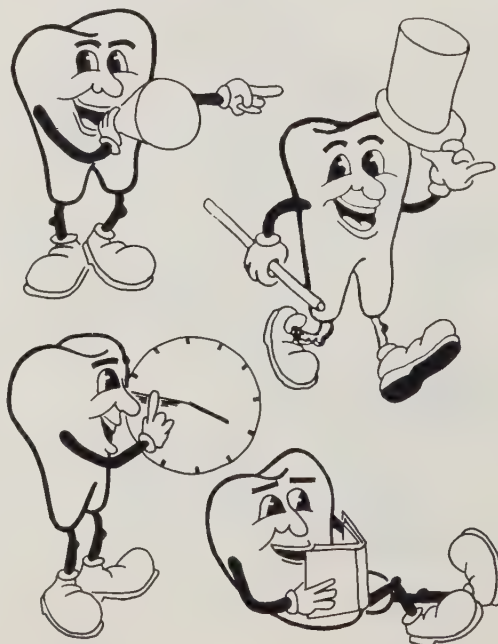
"The Moments of Truth"

The power of professional service rests in the management of thousands of points of contact where the patient has an opportunity to form an impression of our practice. These are called, "Moments of Truth" or "Critical Incidents".

To analyze the moments of truth in your practice consider:

1. The first telephone impression.
2. The first impression of the physical layout and systems in the practice including written information.
3. The accessibility to the practice (parking, location and office hours).
4. The first person the patient meets in the practice.
5. The second or subsequent persons met.
6. The presentation of information on the first appointment or recall appointment, (interviewing skills, new patient letters, patient education materials, videos and slides).
7. The ability to help the patient understand and find a solution for their concerns/problems, (listening and responding skills, problem solving skills).
8. The payments and paperwork (written and one-to-one explanations).
9. The consequent appointments.
10. The response to recall notices, follow-up telephone calls, newsletters, internal promotions such as cavity free clubs.

To calculate the number of **moments of truth** in your practice: multiple these 10 moments of truth (more or less) by the number of patients per day and then multiple that by the days worked in a year. Surprising isn't it!



At some point, you may find it interesting to rate the customer service I.Q. of your people and do a customer service audit to discover where the weak links exist in your team and the patient's perceptions of your practice philosophy. Remember if you can "manage your moments of truth better than your competition" you stand a much higher chance of remaining prosperous in today's world. If you can "out-manage the competition's negative moments of truth" in your own service cycle, that alone will give you a winning edge. Δ

Claudia Anderson is President of Anderson Programs Inc., Vancouver, B.C. She graduated from the University of Manitoba in 1965 with an R.D.H. and is presently a masters candidate in educational psychology. Claudia lectures part-time at the University of British Columbia, Faculty of Dentistry. Anderson Programs Inc., is a consulting company that works with dentists in the areas of strategic planning and practice management.



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Money Management

Essentially, tax and money management are entering a whole new phase. On the one hand, it's more difficult for professionals to earn extra revenue because of competition, and on the other hand, Revenue Canada is shutting down tax shelters. Consequently, we are learning to pay much more attention to how we handle our cash flow.

Why bother? Is it really necessary? The answer is a definite yes! We all know successful professionals who retired without adequate cash reserves. It's easy to do. You think you're making enough money every year, you've got what you think are adequate investments, you think you're doing just fine. However, as you get down to some serious long range planning, you discover you're not as well off as you thought. By then it may be too late to catch up. How can you avoid putting yourself into that position? The answer is by spending more quality time on your financial affairs, starting now.

In the next few articles I will give you some solid financial planning guidance. In each case I will be using three age categories, (under 40, 40-55 and over 55), as the priorities in each age group differ. I will deal with a multitude of topics including wills and estate planning, cash management, tax shelters, income splitting, etc.

Timing is everything

As with many things, timing is everything, and now is an excellent time to get started. You will have made your 1988 RRSP contribution (and hopefully your 1989 as well) and there is nothing more you can do about your 1988 personal income tax return. With Christmas bills, RRSP contributions, and income taxes coming between January and April, your cash flow is probably down to zero as well.

Let's begin. We cannot plan until we know a little more about the past, the present, and what to expect in the future.

The Past

The first thing you should do is determine what your net worth is. Where has the past brought you; what have you accumulated to date?

Make a list of all your assets and liabilities. Then subtract the total liabilities from the total assets — the difference is



*Robert M. Paterson, CA, MBA, RFP
Vancouver, B.C.*

your net worth. You can probably get a form from any bank to help with the calculations. Use realistic figures for your assets and assume that the values are those you could get if the assets were sold today. Don't rush out and get everything appraised, but be reasonable in the values you use. There is no point in fooling yourself right from the start by inflating values. Try to arrive at a number that is reasonably accurate, without quibbling too much about a few thousand dollars here or there. Similarly, the liability figures should be what you would have to pay today to retire the debt.

You've just brought yourself into the present, because your net worth is a picture of your financial situation at the present time. It's a critical number, because success will be measured in slow but steady increases in that figure.

The Present

The next step is to get some idea of your present cash flow. This may take a bit more time, but you do need to know how much you are spending monthly or annually. This is a must if you want to do much planning for the future use of your cash flow.

For example, if the net profit of your practice is \$100,000, and income taxes take 45 per cent of that, you're left with \$55,000. If you make the maximum RRSP contribution, that takes \$7,500, leaving you with \$47,500 to live on. That's about \$4,000 per month to cover basic living expenses and provide what I call "discretionary" income. And that's the figure we need — how much discretionary income we have left to get us where we want to go.

The Future

Let's look at the problem of the future. If your living costs after retirement will be fairly close to what they are today, then you will need the same \$100,000 gross income we referred to above. To earn that, you will need investment assets of about \$1,000,000 to generate that \$100,000 per year. Remember, investment assets exclude your home and other items which are not generating income. However, inflation will double that \$1,000,000 in about 12 years, so your goal will keep increasing. The one consolation is that it gets easier to reach that goal in your middle years, because your discretionary income is at its highest, and hopefully, most of your financial obligations have been eliminated.

I encourage you to work with me and go through the above exercises. If you do, you will obtain the most benefit from these articles. You may not agree with everything that I suggest, and some suggestions may be totally "off base" for your circumstances, but at least it will get you thinking about the whole process of alternatives. The more you think about your own financial affairs and the alternatives available to you, the more attention you are devoting to your financial planning, and after all, that is the ultimate objective.

In future articles, I'll discuss tax shelters and asset allocation.

On the tax shelter side, I'll make a preliminary review of the shelters/investments available in 1989, comment on their merits (or otherwise), and suggest how suitable they might be for your financial portfolio.

Briefly, asset allocation is analyzing your net worth and separating your assets into groups, (such as personal assets, RRSPs, and investment assets). Within each group, a further breakdown is needed to prevent too much emphasis in too few investment areas.

That's what I'll cover in the next article. Δ

Robert Paterson is a Chartered Accountant with an MBA from Simon Fraser University. A Registered Financial Planner, he specializes in financial planning for professionals and senior executives.

Susan Dixon, co-author of this article, is a Member of the Canadian Association of Financial Planners and has been with the Paterson & Associates firm for two years. She has designed extensive financial planning computer models.

The Dentist and the Bereaved Patient

Mary E. Toombs*
Winnipeg, Manitoba

The thought of having a newly-bereaved patient in the chair is not a comfortable one. Assuming the dentist has learned of the bereavement in the A. family before Mrs A. arrives, many concerns surface. Shall I forewarn the receptionist? The assistant? Saying what?

- Mrs A's husband just died — but don't mention it
- Be gentle and extra kind
- Keep talking — so she doesn't have a chance to say anything
- Don't do or say anything to make her cry

Let's ask ourselves some questions. We know we don't want to make things any more difficult for Mrs A, but why are we so concerned about a possible "undesirable" expression of grief? Who would the extra solicitude help? Her or ourselves? Why should we steer her away from talking? Why do these questions make us uneasy? Why can't we just get on with what she came for, and move her on out of the office as quickly as possible?

Now Mrs A. may have her own concern about how the appointment is going to work out, but she would be surprised to learn that she is putting us into such a state of uncertainty. Are we the uncomfortable ones who don't want to be upset? *What is really happening here?* On the surface of it we are being asked to deal with a person who has suffered a loss. Something or someone who was part of her life, part of her effective functioning in the world, who was connected with her sense of herself, is now absent. But somehow, her loss has "pushed our buttons", a sure sign that we identify consciously or unconsciously with another, or with someone else's experience. We have an energy-filled gut reaction that



Mary E. Toombs, BScN, MEd, is a retired nurse and school counsellor from Winnipeg. She has had many years of experience conducting workshops (team teaching with her husband) in counselling and human growth groups including couple communication, marriage enrichment, human sexuality, grief and loss, journaling, dreams, spiritual growth. For several years she was a volunteer in a Palliative Care ward.

surprises and confuses.

Here the trigger to which we are responding is the sense of loss, as personified by Mrs A. *We know about losses*; we have been living them since childhood: our favourite toy disappeared; we changed schools; our dog died, our friend moved away. As we grew they continued: loss of privileges, of virginity, of a job we knew we deserved; our friend

committed suicide. As adults we live and fear them daily: our hair and our waistlines disappear, our patients transfer to other dentists, relationships change, marriages dissolve, our parents and friends, and sometimes our children, die.

Recollection of our own pain

The presence of Mrs A. reminds us of the pain in our lives; she brings into our consciousness the kinds of feelings we ourselves have struggled with in the dark of night as we tried to deal with our own losses. We know the shock we felt when some taken-for-granted aspect of our living was removed. We remember the denial, the why-me anger, the my-fault guilt, and the incredible homesickness for the lost relationship, place, or situation. Such remembering can help us to be gentle with Mrs A. and ourselves. If we can own up to our common humanity with Mrs A. we will be able to receive her in our office with both equanimity and compassion. Our approach and response to her grief will depend as much on our own degree of comfort, as on the relationship we have already established with her.

Now, what kind of behaviour might we expect from Mrs A. and how can we deal with it most helpfully?

1. Distraction/confusion

Mrs A. could still be in a state of shock, unsure of what she needs. She may not really hear what is being said to her, so with understanding and patience we may have to repeat simple instructions.

* First North American serial rights.

Appointments should be confirmed by written cards and/or telephone reminders.

2. Weeping

To have dental work done at a stressful time may increase Mrs A.'s vulnerability. Tears can be a healing response to helplessness and grief (for men as well as women) so we just let her quiet tears flow, without any reaction from us. "It is such a secret place, the land of tears", says Antoine de Saint-Exupéry in *The Little Prince*. We put tissues within her reach, and assure her that crying is OK. If it leads to sobs or coughing, we pause for a time and ask her to tell us when she is ready to go on. I would not recommend leaving her alone unless she requests it. We tell her we are quite content to wait; if we feel pressured because of another patient, we tell her so, and have our assistant remain with her. We take our cue from her in this expression of grieving, let her regain her own control, then carry on.

"It is such a secret place, the land of tears".

3. Talking about the loss

Mrs A. may or may not wish to talk, but we need to acknowledge that something has happened. It will be a judgement call whether or not we speak of it before we start, to check out her preparedness for to-day's treatment.

If she wishes to talk, our job is to listen; not pry, or change the subject for our own comfort, but just follow along where she obviously needs to go. Sometimes we *can help* the process by picking up on what she has said, e.g.: Mrs A. says: "I feel terrible". Our possible response: "Can you tell me more about that?" or "I can see you are distressed" or "What seems most terrible right now?". These keep the focus on Mrs A., let her know she is being heard. They also permit her to give words to her grief, a necessary part of the mourning process. *Unhelpful responses* are the trite platitudes: "It was all for the best"; "You'll be fine"; "I know just how you feel"; "It was God's will"; "You're still young, you'll get over it". Most unhelpful are the controlling words that bespeak our own discomfort: "Don't talk like that"; "Don't cry".

If Mrs A. does not want to talk then all

we need say at an appropriate moment is "I was sorry to hear about your husband", or "This will be a hard time for you". These non-demand statements express our sympathy, recognize that she is in pain and let her know that she has our support. Sometimes it is harder to express ourselves even to this degree when what has happened seems catastrophic to us (suicide, accident), but it is even more important at such times to make the effort to communicate our concern.

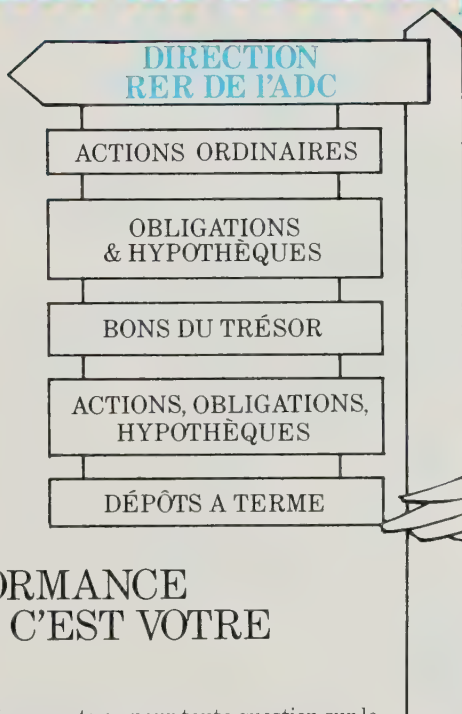
In this connection I recently heard a young woman speak very warmly of her dentist. She had told him during her last visit that her husband's cancer had recurred. His response was: "I am very sorry to hear that". He paused, then added: "I don't know what else to say". For her, she said, that was enough. It was honest, and caring, and made her feel that he was sharing her fear and helplessness.

Working with a grieving patient, then, can be a gifted time. It is an opportunity for us and our staff to be supportive of a person in need, and it helps us begin to face some of our deep-seated concerns about our own mortality. △

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BONE REMODELING ORTHODONTICS BY JAW REPOSITIONING AND ALVEOLAR GROWTH

Leon Kussick

*Published by
Quintessence Publishing Co. Inc.
Chicago, 1987.
284 pages*

This book documents twenty-seven years of the author's clinical experience using the bone remodeling appliance system which, in the author's words, is in reality a fixed removable orthodontic appliance. As such, the appliance represents the author's variation and adaptation (modification) of other functional appliance systems. The book documents his technique for mandibular bite registration, continuous equilibration into centric relation and a masseter muscle relaxation technique for temporo-mandibular joint problems.

The appliance system used is considered by the author to be superior to fixed and conventional functional appliances because of its increased sturdiness, speed of action, patient profile control, and reduced wearing time, compared to conventional appliances. The book is essentially a series of case reports showing beautiful facial and occlusal results. These reports, however, suffer in that there are no cephalometric tracings, superimpositions or temporo-mandibular joint radiographs to document how the results were obtained, or the stability of the jaw unit relationships. The diagnostic system appears to be deficient and no cephalometric analysis is outlined in either the section on diagnosis or treatment planning. The book contains a chapter outlining the construction of the appliance. It also presents the author's method for simple and quick resolution of temporo-mandibular joint problems. However, the approach used appears to ignore the multi-factorial nature of the temporo-mandibular joint disorders.

In conclusion, the book is an interesting compendium of the author's orthodontic results as illustrated in case reports. The author's concepts and conclusions are based on clinical observations of 2,500 cases, and his experience in researching muscle physiology. The author, admits, however, that his conclusions are still "clinical hypotheses", and he notes he

would welcome research and analysis to explain further the mechanisms and clinical responses that he has observed. Δ

*This book was reviewed by:
Dr. Donald Woodside
Professor and Head
Dept. of Orthodontics
University of Toronto*

DENTOFACIAL DEFORMITIES — INTEGRATED ORTHODONTIC AND SURGICAL CORRECTION

by Bruce N. Epker and
Leward C. Fish

*The C.V. Mosby Company,
2 volumes, \$265.50*

The publication of this substantial work which has undoubtedly found its way on to the bookshelves of many surgeons and orthodontists, is a significant milestone in the profession's approach to the clinical management of dentofacial deformity. The confident manner in which the entire subject is dealt with not only reflects the experience and knowledge of the authors, but is itself a statement that treatment outcomes will in future be judged more uniformly and stringently, and clinicians must expect their management to be rated by the standards of care outlined in a text such as this.

The text is presented in two volumes of equal and manageable size which reduces the difficulties of carrying a practical feature which students will welcome. Elegantly bound with sturdy covers, they will adorn one's bookshelf.

The subject matter is presented in five sections, the first of which deals with evaluation and treatment planning from the perspective of the clinician. The principles embodied in Chapter I, "Essential patient evaluations" are rightly emphasized and are presented with clarity and simplicity. Many unfavourable treatment outcomes will be prevented if the reader takes the advice rendered in this chapter and resists the temptation to overlook or bypass deficiencies revealed in this initial evaluation.

The authors provide examples of the various forms they use for data collection and explain in the text how this information is collected and what it means to them. This is important as many will wish to use different types of records while completing the same examinations. This area of evaluation, which of necessity involves much that is subjective, pro-

vides sufficient guidelines for the novice to avoid some of the pitfalls which others have had to learn by experience. The reader is assumed to possess a certain degree of knowledge and diagnostic acumen by the authors, and this prevents the text from descending into verbose and confusing detail.

Section I contains three additional chapters which include overall treatment planning, pre-surgical planning, and patient follow-up until the treatment is completed. The reader is led through the process of treatment planning in a systematic manner and provided with both examples and with solid guidelines which will greatly assist in the problem solving aspects of this crucial exercise. The authors also have chosen to discuss the topic of Complications at this early point in their book and this approach must be lauded. All too often, this is put at the end of a text and frequently given insufficient attention.

Section II on Class II Deformities consists of five chapters which systematically present treatment approaches to the common variations of this type of skeletal disproportion. They follow a common format which although repetitive includes the essential steps required for successful integrated treatment. The text avoids much unnecessary repetition, however, by referring the reader to previous chapters where the subject matter has been explained in more detail. Section III covers Class III Dentofacial Deformities which includes mandibular prognathism, maxillary deficiency, mid-face retrusion and cleft lip and palate deformities.

Section IV deals with Class I problems which principally involve maxillary vertical and transverse disproportions. Chapter V, the last section, covers the difficult area of asymmetric deformity and this is reviewed and presented with clarity and some degree of authority. The illustrations throughout the book are of excellent quality and references are more than adequate. One must congratulate the authors for a useful and longlasting contribution to the (bibliography) on this clinical area.

There is a fairly easy transition from surgery to orthodontics throughout the text and the surgeon will have very little difficulty in understanding the solutions to the orthodontic problems.

This book does succeed in presenting these two clinical specialties as a unified, complementary team with excellent results for the patient. I can highly recommend

this work to all orthodontists and oral and maxillofacial surgeons.

*This book was reviewed by
Dr. John B. Curran
Acting Head
Section of Oral and Maxillofacial Surgery
Faculty of Dentistry
The University of Manitoba*

FUNDAMENTALS OF PEDIATRIC DENTISTRY

R.J. Mathewson,
R.E. Primosch,
D. Robertson

*Quintessence Publishing Co.
Chicago, Illinois
1987, 435 Pages*

This book is the second edition of the text originally published as *Fundamentals of Dentistry for Children* in 1982. The change in the title of the book reflects the 1985 policy of the American Dental Association which endorsed the change in specialty name from Pedodontics to Pediatric Dentistry. The book has undergone a significant reduction in the number of pages, from 726 to 435, by rewriting each chapter and combining two or more chapters from the first edition. In addition, a much smaller typeface has been used to condense the text. This has not seriously affected the readability of the book, although I prefer the typeface used in the first edition.

The second edition of this work is well written and free of technical errors. It is also very well referenced with up-to-date citations. This makes the book particularly useful in an undergraduate pediatric dentistry course. Each chapter is preceded by a list of objectives which are readily obtainable. The authors state in their introduction to the book that it is intended to be a 'how to' book. They have admirably met this goal by 'stuffing' each chapter with lists, tables and figures pertinent to the topic of the chapter. This approach allows for the comparing and contrasting of material making the learning of the material easier and more enjoyable. Procedures are well defined in a step-by-step progression and the text is supplemented with numerous line drawings and photographs.

In the first edition several chapters were out of sequence with the remainder of the book. For example, in the section on child development chapters on fluoride

and sealant use were included. These sequencing errors have been corrected in this edition and the material follows logically in four sections which deal with Diagnosis, Prevention, Child Management and Restorative Procedures.

Unfortunately the book is not without its problems. In the revision process several key areas were reduced or eliminated. The chapter on Infant Oral Health was eliminated and the chapter on Child Abuse was reduced to a few paragraphs in another chapter. This is unfortunate as these topics have received much attention of late.

While the authors make good use of line drawings, many of them are too simplistic or poorly drawn. The section on Restorative Procedures could have been more visually effective if high quality clinical photographs had been used in place of some of the line drawings. For example, the discussion of problems which affect the placement of a stainless steel crown presents recognized but infrequently performed alternatives as solutions to these problems and illustrates their use through line drawings. The credibility of this discussion would have

been strengthened if actual cases had been presented. My experience has been that undergraduate students or dentists regard these novel approaches as academic poppycock unless they are supported with clinical examples demonstrating that they do, in fact, work.

The quality of photographic and radiographic figures in this second edition is inferior to those from the first. This is a major drawback to an otherwise superb book and not up to the high standard which we have come to expect from Quintessence. I suspect that the authors were unhappy with this aspect of the book also.

The authors are correct in stating that the reader of this textbook will have the fundamental background for treating the child patient. I believe that this book could be used as the primary resource for the undergraduate dental student or the practitioner who seeks up-to-date information concisely presented. Δ

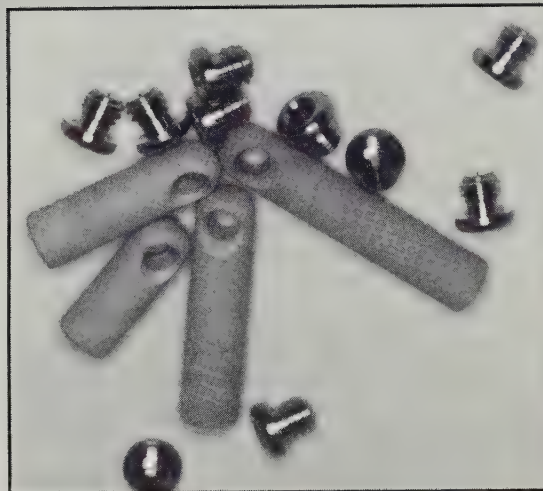
*This book was reviewed by:
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“All Implants Succeed: All Implants Fail”

PART ONE

P. Ralph Crawford, DMD

Implant dentistry in various forms has been around for many years. In fact for centuries. It sounds almost unbelievable but archeological examinations have revealed that the ancient Egyptian and Central/South American cultures had crude implant designs of bone, ivory, precious stones, human teeth and metal. A scan of the literature since then reveals that dentists have been diligently seeking the “perfect implant”. They have made implants of gold, platinum, silver, lead, iridium, porcelain, vitallium, ivory, sapphire, bioglass and carbon; (and probably other materials).

Implants have been constructed in many shapes; blades, cylinders, screws and mesh. They have been round, square, tapered, blunt and pointed; porous and non-porous, hydroxy-apatite coated and not.

The lack of precise clinical investigation, questionable and often unacceptable success rates, deterred many practitioners from entering into the implant area. Chance was to intercede. In the 1950s

— Titanium and its alloys are the most inert of the implanted metals and do not corrode in the body. Their excellent strength and stiffness are combined with lower density compared to cobalt-chrome alloys. There is also a beneficial interaction on an atomic level between the bone and the titanium through the thin, oxide layer covering the actual metal surface —

In ensuing years Brånemark, experimenting with dogs, investigated various shapes and designs of implants. In 1965 he inserted the first pure titanium oral implant for a human patient. By the early 1970s, *Brånemark had standardized procedures . . . he introduced the predictability and longevity standards against which other implant standards were to be compared.* After duplicating Brånemark's success rate statistics, Dr. George Zarb convened a Conference in Toronto in 1982 and introduced the system to North America.

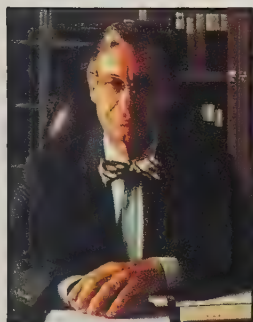
Today, seven years later, implants are perceived as something between the Holy Grail of Dentistry and a solution to all prosthetic problems. Concomitantly hurled forward by commercial entrepreneurs, the implant “status” is bogging the mind of the average dentist.

How is the Dentist to select a system??
Who is the Dentist to really believe??
Where does the Dentist turn for help??

The Journal, to assist its readers, surveyed the implant arena, (we almost said “jungle”!). It has reviewed reams of literature, sifted through many, many commercial pamphlets; visited implant offices, attended “overview” symposia in Toronto (October 1988) and Vancouver (February 1989), and even spent eight hours in a Mayo Clinic operating room observing an autogenous grafting osseointegration procedure.

Still, the Journal cautions — **we do not have all the answers.** However, what appears on our pages in a two-issue format is information which the Journal feels is valuable for the dentist interested in a methodology that is transforming the practice of dentistry. Probably Dr. Gordon Christensen of Clinical Research Associates of Provo, Utah, predicts the future as accurately as anyone: “I have no reservation in saying that the typical dentist a decade from now will have implants as part of his armamentarium. It will not be the occasional dentist, but the majority of dentists.”

The title “All Implants Succeed: All Implants Fail” was taken from Vancouver oral maxillofacial surgeon Dr. Harold Bergman's lecture on his Anchor system. In explaining the variables of all systems and techniques Dr. Bergman suggested that no one person, no one commercial company, no one practitioner has all the answers. “No one has cornered the market”, said Dr. Bergman.



Dr. Per-Ingvar
Brånemark

Dr. Per-Ingvar Brånemark, a Swedish orthopedic surgeon, while conducting experiments on blood circulation in bone, found that the pure titanium optical chambers he had inserted into rabbits were almost impossible to remove. This serendipitous event was called “osseointegration”.



Dr. Burton Goldstein

One of the last speakers at the Vancouver Symposium was **Dr. Burton Goldstein**, an oral maxillofacial surgeon and University of British Columbia professor. Dr. Goldstein should have been first on the program. He admitted that dentistry was certainly on the threshold of exciting and important events historically but to him there is a concern about the element

of time. He stated, "Implants represent human experimentation without any substantial animal studies to support what we are doing. **The level of knowledge and sophistication we are at truly is taking place as we are doing it.** I am not particularly impressed with six-month follow-ups, two-year follow-ups or twelve-year follow-ups of any selected individual cases."

Dr. Goldstein indicated dentistry's dilemma, "I don't have any better alternatives at this time to anecdotal case reports and that's what we are dealing with. Please be aware that this is a dynamic and changing situation we are discussing. The systems and commercial product representations are, in my opinion, individually almost irrelevant." After listening to the proponents and the users of various systems — and there are five or six main ones — Dr. Goldstein's words "individually almost irrelevant" are very close to the truth.



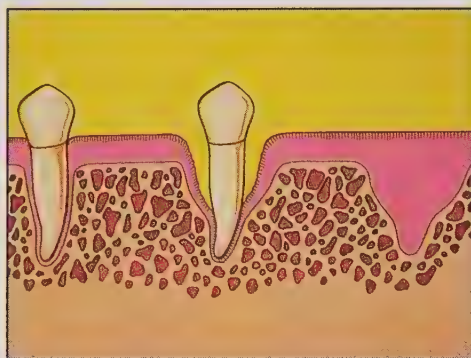
Dr. Monty Reitzik

Dr. Monty Reitzik, physician and maxillofacial surgeon from Vancouver, echoed thoughts similar to Dr. Goldstein's but with a touch of cynicism. "Today general practitioners are being bombarded with an enormous volume of promotional material. If you are like me you will still be very confused about which implant system to use. How do they work, do they work, is one better than another? **The tendency of course is that you will probably choose a system that is best sold to you — the best salesman.** This is not how to choose an implant. The basis of how to choose an implant is to understand how they work."

If anything significant has been learned from the many, many hours of pondering the implant "world", it is that the Success/Failure of **all** systems and **all** operators depends upon a number of main-line variables. . . .

1. Biologically Acceptable
 2. Patient Selection
 3. Placement of the Implant
 4. Construction of the Superstructure
 5. Laboratory Back-up
 6. Maintenance
- (all bound together with meticulous attention to detail)

The Perimucosal Seal



The natural history of periodontal disease following a breach of the gingival cuff.

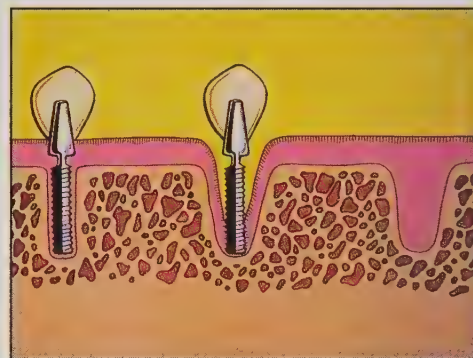
There just doesn't appear to be one variable more important than another. Failure in any one of the six and the implant could be doomed. Dentistry has never been a discipline of half measures but sometimes with a bit of luck at corner-cutting, shoddy technique will succeed despite what is done. Not so with implants!

I. Biologically acceptable

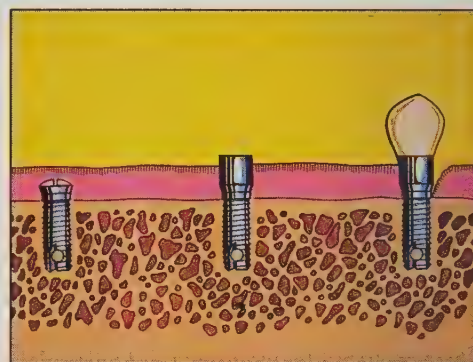
A. Bone

Dr. Reitzik set the stage of the Vancouver Symposium by reviewing the very heart of implantology — bone healing. He indicated that the ideal situation for implants should be "no gap-no movement". The "no gap" is achieved by meticulous preparation of the bone bed in which the implant is placed and the "no movement" through burying the biologically acceptable material, **unloaded**, within the bone until osseointegration is accomplished, usually in three to six months. This is precisely what Dr. Brånemark proved to the world. Reitzik told his audience, "The Swedes say you must have pure titanium to get the implant to work but I personally do not think that this is true. I believe you can get osseointegration with titanium and other materials also seem to work well. What I do feel certain is that the smaller the gap the greater the degree of osseointegration."

Dr. Ralph McKinney, of the School of Dentistry in Augusta, Georgia, at the National Institutes of Health Consensus (NIHC) Development Conference in June 1988, speaking on the Scientific Basis for Dental Implant Therapy said, "**The regenerative capability of bone is tremendous . . . bone is readily compatible with many dental biomaterials.** This includes polymethylmethacrylate,



Similar pathology with fibrointegrated implants, with loss of cuff integrity.



Osseointegrated implants with gingival cuff integrity.

(PHOTOS: DR. MONTY REITZIK)

stainless steel, and vitallium, as well as titanium and ceramic materials." Titanium however is the material of choice of the six systems presented at the Vancouver and Toronto Symposiums. The Nobelpharma Brånemark, Core-Vent, Interpore IMZ, Integral, Denar's Steri-Oss, and Anchor systems are all titanium based.

The critical aspect, more than choice of material, is the **handling** of the bone. The requirement of exquisite surgical technique is stressed over and over again. Reitzik said, "You must not overheat bone. If you overheat above 46C for just six to eight seconds you stand a good chance of bone die-back. You would end up with gap healing or secondary bone healing." The bone must be drilled very slowly to avoid heat build-up; suggested speeds vary from 800 to 2,000 rpms. Constant irrigation of the surgical site is critical both to reduce heat and remove debris. Clinicians do not appear to be in full agreement whether external or internal irrigation is the most effective. Com-

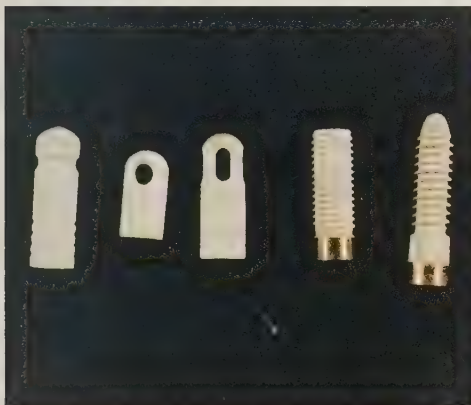
mercial distributors have an almost mind-boggling array of instruments for implant surgical procedures. Does this indicate there probably is not yet any "best" instrumentation? It appears the procedure depends far more upon the "best" ability of the operator.

B. Perimucosal seal

The requirement of an effective soft tissue "seal" is stressed whenever the topic of endosseous implants is discussed. The presence of a seal is a prerequisite. Failure to achieve or maintain it results in apical migration of the epithelium into the implant/bony interface resulting in eventual fibrous encapsulation of the root portion of the implant system. Dr. McKinney in his NIHC Consensus paper reported, "Of great interest is the perimplant gingival response, which forms the biological seal between tissue and implant.

Regeneration of the attached gingival tissues occurs around the implant post and provides a protective barrier between the external and internal environments." He outlined the animal histological studies that indeed indicate the gingiva regenerates and heals around the transmucosal post, forming a new free gingival margin complete with sulcus and free gingival groove. However he cautions that even though many things are known about the implant-tissue interface there are still many scientific questions that remain unanswered. He urged continued investigation into such areas as . . .

- How successful is the perimucosal seal?
- What is the role of implant materials and surface textures on the seal?
- Does epithelial alone create the seal?
- Does connective tissue contribute to the seal?
- Can scientists "engineer" tissue to provide a better seal?



C. Hydroxyapatite: "H/A"

Reference to surface coatings of implants is placed in this section of "Biologically Acceptable" as its use is gaining promi-

Clinician-Presenters: First Annual Pacific Implant Symposium, Vancouver



This group of clinician presenters at the First Annual Pacific Implant Symposium in Vancouver, February 3-4, 1989, posed during a break in the proceedings. They are, front row, left to right: Dr. Stanley Sapkos, Seattle; Dr. David Vassos, Edmonton; Dr. Basil Plumb, Vancouver; Dr. John Kay, San Diego; Dr. Alex Bowman, Vancouver; Dr. Wayne Halström, Vancouver; Dr. Bunny Berezon, Victoria. Back row, left to right: . . . Dr. Peter Stevenson-Moore, Dr. John Nasedkin, Dr. Monty Reitzik, Dr. Harold Bergman, Mr. Stephen Schaffer — All from Vancouver. Clinicians absent from the photo: Dr. Philip Barer, and Dr. Burton Goldstein, both from Vancouver.

(PHOTO COURTESY, MAPLE LEAF SEMINARS, CALGARY)

nence. Of the six different systems discussed in Toronto and Vancouver only Nobelpharma's does not have some type of H/A coating implant.



John F. Kay, PhD

In Vancouver **John F. Kay, PhD**, President of Bio-Interfaces, Inc., of San Diego, California, presented his findings on the development of H/A coatings for orthopedics and oral implants. He outlined how the response of bone to high quality H/A coatings is an enhancement of osseous deposition at the surface of the implant concurrent with a normal reaction at the bone surface. Dr. Kay stated, "Metal implants "ask" the bone to attach, H/A coated implants "tell" it to attach!"

John B. Brunski, PhD, professor, Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, New York, in his paper to the NIHC Conference referenced Dr. Kay's work in which H/A coating significantly increased interfacial shear strengths over control values at three, five, ten, and even 32 weeks post-implantation.

However, at the same Conference, **Dr. F.A. Young** from the Medical University of South Carolina, stated, "As is the case with titanium, hydroxyl-apatite is a complex material which has been brought into practical usage without a body of studies of processing variables on well characterized materials; without such studies, we cannot achieve consistent and reproducible results . . .

- Is H/A a better implant surface than titanium?
- Is it better for immediate healing?
- Is it a better long-term surface?

These questions should be answered at the cellular level and should be answered using properly characterized materials."

II. Patient selection

Patient Selection appears to fall into two critical areas; first the patient's general overall physical and mental well-being and secondly, the quantity and quality of the residual bone.

A. Physical/Mental health

All clinicians agreed that almost any patient is a good candidate for implant procedures. The usual medical history and health screening procedures would apply. It was evident that most implant procedures do not require general anesthesia.

Dr. David Vassos, a general practitioner from Edmonton who has been involved with dental implants since the

early 1970s and is a Credentialed Member of the American Academy of Implant Dentistry, spent considerable time at the Vancouver Symposium dealing with patient compliance. To Dr. Vassos, "Getting into the patient's head and finding out what kind of lifestyle they have", will do as much toward success as the actual implant procedure. "Listening pays", said Dr. Vassos, and he urged dentists to question patients carefully regarding stress related habits such as nutrition, smoking, coffee and alcohol consumption.



Dr. David Vassos

Dr. Vassos, who has been using the Denar "Steri-Oss" system for about 2½ years, (he called it "user friendly"; a term almost all commercial suppliers called their individual systems!), also had good advice for the dentist contemplating implants. ***"Use your own good common sense; don't just buy everything in sight. Sit down and think. Use your own good judgment. Don't just think materials, learn about concepts!"***

B. Quantity/quality of bone

Dr. Stanley W. Sapkos, a Seattle periodontist in private practice and part-time staff member at the University of Washington, presented an overview to his Vancouver audience on bone space evaluation. He said "the dentist must determine if there is enough to work with and establish some kind of guidance to place implants surgically." He indicated it was very difficult to categorize various types and qualities of bone because the arch quality and the volumetric quality, varies from one area of an arch to another. Speaking on diagnostic tools available for assessing bone, Dr. Sapkos indicated that the dentist relies mostly on radiographic screening devices, but CT scans are now being utilized more frequently. As the availability and financial practicality of CT scans, linear tomography and poly-tomography become more common, the profession can expect to see more use of these systems.

Dr. Sapkos made some interesting observations regarding severe periodontal disease: "As a periodontist it took me a long time, but in the last two or three



The greatest cause of frustration and failure is improper placement, the angulation of the implant.

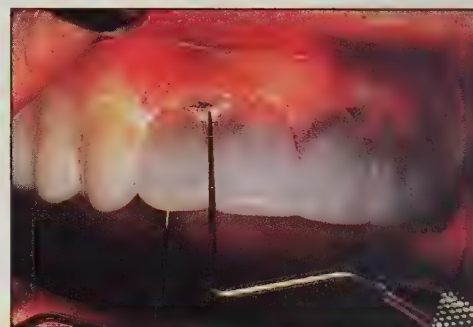
years my choice of therapy would be to remove severely involved teeth, fill the socket sites with freeze-dried bone, maintain as much vertical height as possible, go back and insert a couple of implants and then restore. The same could be said for through and through furcations."

There is general agreement on guidelines for the amount of adequate bone necessary to withstand the surgery of placement and stress of implant function. In addressing the NIHC Conference last June, Dr. Charles Bolender, chairman, Department of Prosthodontics, School of Dentistry, University of Washington in Seattle, outlined the indications for various implants. His recommendation for intraosseous cylinders is 7 mm or greater vertical bone height and 6 mm or greater bone width. Dr. Leonard Shulman, head, Department of Implant Research, Forsyth Dental Centre, told the same Conference, "One millimetre remains the empirically derived peripheral requirement; anything less would be restrictive surgically and make perforation a likely risk. Two millimetres are generally recommended between an implant and an adjacent tooth . . . root-form implant systems generally require three millimetres between implants."

Speaking on the character of bone, Dr. Shulman continued, "Cancellous bone may present placement problems, but generally does not rule out implantation. The surgeon, encountering soft spongy bone, must utilize the long implants and must engage cortical bone where possible. In the posterior mandible and maxilla where there is little cortex to engage, it is best to preserve the crestal bone; in the maxilla, passing through cortical walls of the antrum or nose may be helpful. Placement into the maxillary sinus carries with it a 10 per cent reduction on prognosis compared with maxillary fixtures in general; but in porous bone, short fixtures require cortical bone for fixation and osseointegration."



Improper placement: the implants are located too far from lingual of the maxillary ridge.



Implant improperly placed interproximally. If a clear plastic stent had been used, which had a hole drilled in the centre of the lateral, guidance would have better positioned the implant.

(PHOTOS COURTESY OF DR. B. BEREZON)

III. Implant placement

Earlier in this paper it was stated that the variables in implantology had to be bound together with absolute attention to detail. ***If there could be one variable that requires more detail than another it is in placement. Placement determines success or failure!*** One clinician summed it up by saying, "In spite of our enthusiasm we just can't jump in with both hands — it does require a lot of planning up front."

For sake of simplicity this section will be divided into two sections — **Teamwork and Placement.**

A. Teamwork

During the Vancouver Symposium considerable discussion was devoted to the cooperative effort required between the dentist who actually placed the implant in bone and the one responsible for the superstructure. An interesting aspect was that often the actual "brand" of implant was not in question. A number of the operators (and these are dentists in "implant practices") are using as many as three and four different types of systems. ***It is obvious: these experienced operators are not "hung-up" on one brand or another.***

Dr. Sapkos spent considerable time emphasizing the team approach, "We have gone to a team type of approach

between restorative and surgical specialists. There is a need for a cooperative planning session to not only determine whether the patient can have implants but what kind of implant can be used and how many. I am bothered by individuals who have jumped into one camp or another. You just can't do that. You need to choose a particular implant for a particular case. A lot of times we are using three or four implant systems for one case with cooperative input from everyone concerned. I can't over emphasize the fact that one system is probably not the answer. If you are going to get placing implants you really need a large inventory to meet all requirements."



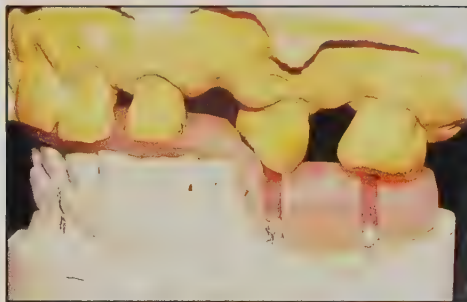
Dr. Bunny Berezon

Dr. Sapkos was supported by **Dr. Bunny Berezon**, a prosthodontist from Victoria, B.C., "What I am going to talk about are the prosthetic principles of team restorative dentistry as I apply them to the Core-Vent System but as Stan (Dr. Sapkos) related, we all use a number of systems. I happen to be using three right now and will be starting a fourth system soon."

B. Placement

Placement involves two main considerations; what site on the arch and at what angulation within the arch. Dealing with site, reference is made to Dr. Leonard Shulman's paper at the National Institutes of Health Consensus Development Conference; "The implant site selection appears to be a critical determinant of success. Zarb, Krogh, and Higuchi have described sites in the mouth in terms of prognosis. The mandibular symphysis appears to be the most favourable site for Bränemark implants; the anterior maxilla, second. Mandibular posterior sites rank third, because they are more porous than the anterior portions and offer little cortical bone fixation; even small fixtures of 7 mm may be at risk there. The posterior maxilla ranks fourth. Tuberosity fixtures integrate at a low rate and do not withstand loading very well; they must be pinned to the cortical junction with the pterygoid plates. Krogh states that his only long term failures are maxillary premolar and molar area fixtures."

Dr. Bunny Berezon (Victoria) encapsulated guidance for implant placement,



The construction of a stent on articulated casts provides more exact guidance for the placement of the implants.

"... the buccal lingual placement of an implant is dictated by the bone — the mesial distal location is dictated by the dentist."

Once the patient selection process is complete, decisions relating to the kind of implant (each system has a choice of lengths and types) must be made. How many and where in the tissue are they to be placed? Prior planning is critical. Each clinician made it abundantly clear that the **greatest cause of frustration and failure is improper placement, the angulation of the implant.**

Poor placement angles appear to happen more often when two dentists are involved; one who places the implant and the other who completes the restorative superstructure. Drs. Sapkos and Berezon demonstrated, and strongly recommended, techniques which utilize plastic stents to give guidance for placement. The stents, meticulously planned and fabricated before surgery, indicate precisely where particular implants should go. Dr. Berezon said, "This (stents) is something you will want to do nearly all the time simply because surgeons are surgeons and sometimes they will put them where you want and sometimes they can't because of bone availability. I have a constant battle with people putting in implants and it is always putting them in the wrong position. It can be a real major problem."

Dr. Sapkos on stents; "They are time-consuming initially but considering the cost of implants and the price for misplacement, they are worth it. Even if you

are the surgeon and restorative dentist you still need some guidance and planning. It is pretty hard to go in there, raise a flap, be confronted with a lot of haemorrhage and eyeball exactly where you want to place the implants. One of the things we are trying to avoid are angulations to the point that the restorations cannot be utilized."

He continued on to explain that planning ahead, waxing opposing casts, prior mounting to articulators all contribute to a finalized product of ultimate quality.

"You really need some guidance in terms of the opposing arch. If, for example, you are placing implants on the lower arch you need them right under the incisal or slightly under the cingulum of the upper teeth. If you have an upper denture or a properly fabricated duplicate you can create initial guide pins beforehand to orient placement."

The question is often raised, "How many implants should be used?" The answer said Dr. Stanley Sapkos, is "Enough! One of the things we have learned over the past years is that you don't skimp on the number of implants. There is nothing mysterious about an implant. If you are replacing three or four teeth you probably will need three or four implants — the surface area of them does not even approach that of the natural teeth that have been lost."

Dr. Sapkos indicated again that with the wide range of success with implants the old adage, save only one tooth, is fast fleeting; "In the past with the arch that was almost totally edentulous we have

attempted to save even one tooth and build an over-denture with some type of attachment. We are gravitating away from this. It is now just as easy to place four or five implants and a bar attachment with an over-denture."

IV. Superstructure

At the two day Symposium in Vancouver various clinicians spent hours discussing the various types of structures placed on osseointegrated implants. Single tooth implants, fixed crown and bridge, fixed/removable, removable, cantilevered, and almost every other ingenious device dental minds are capable of developing. Despite great variations in superstructures there is a common thread throughout; **not a single clinician appears to waver from the attention to detail that is so necessary to keep success rates in the 90 percentile-plus range.**

It is not the intent of this paper to go into the infinite detail of numerous case presentations of implant superstructure. Dr. Bunny Berezon succinctly summarized the restorative aspects of the implant field when he said, "Emphasis now is not so much towards the implant itself but rather what we do on top of the implant. I think you will see more and more innovations in this particular area."

V. Laboratory back-up

As with the topic of superstructures, it is not the intent of this review to investigate and report on the intricacies of laboratory techniques. Suffice it to say that every clinician who presented a paper at the Vancouver Symposium **was outspoken in support of the laboratory technicians whose skills are an absolute prerequisite** to the success of any prosthesis but particularly in the field of implants.

Typical of the supporting comments for laboratory cooperation were those



Dr. Peter
Stevenson-Moore

of Drs. Berezon and Stevenson-Moore. Both are prosthodontic specialists and are accustomed to doing many laboratory procedures themselves, but both know the necessity for well-trained dedicated technicians. . . .

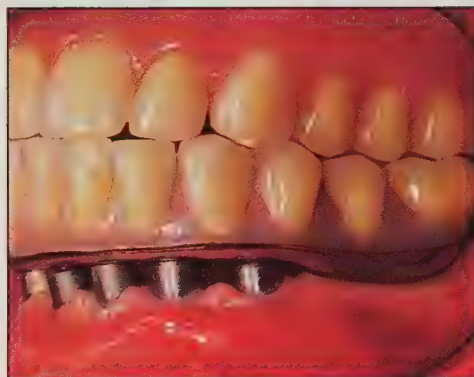
- "We are only as good as our technicians."



It is essential that the laboratory technician is part of the overall team, working toward a successful implant case.



(PHOTOS: DR. P. STEVENSON-MOORE)



"High water" effect may be camouflaged with a flexible silicone insert.

(BY DOWELL CORNING CORP.)



- "It is essential that the laboratory technician is part of the overall team working toward a successful implant case."
- "Never forget that laboratory support is extremely important."

Readers are referred to a recent publication, *QDT Yearbook 1988*. Volume 12, published by Quintessence, where one of the feature articles is entitled, "Laboratory Procedures for an Osseointegrated Implant Prosthesis". This article will introduce the dentist to some of the complexities involved in the fabrication of a tissue integrated prosthesis.

VI. Maintenance

There is scarcely a dental procedure that does not require good oral maintenance on the part of the patient. It is only exaggerated in implant dentistry!

Dr. Stanley Sapkos, periodontist, made reference to some of the problems of maintenance when he reminded his audience to remember **why** the patients were having implants in the first place. In many cases **if the patient had a history of good oral hygiene they wouldn't need an implant now. The question of maintenance of the prosthesis should be determined at the consultation stage.** The dentist must be assured the

patients will care for their mouths. Otherwise, why bother? Dr. Sapkos said that in his office there was strong emphasis on recall — two or three times a year for the first year and then at least yearly.

During a question and answer period the point of using metal scalers for delicate titanium fixtures was raised. Dr. Sapkos indicated that contamination of titanium with another metal was to be avoided and suggested there are manufacturers who now produce pure titanium scaling instruments; some plastic scalers also work well. Δ

Note: The Proceedings of the Consensus Development Conference on Dental Implants, sponsored by the National Institute of Dental Research, Bethesda, Maryland, June 13-15, 1988, are contained in a special issue of the *Journal of Dental Education*, December 1988, Vol. 52, No. 12.

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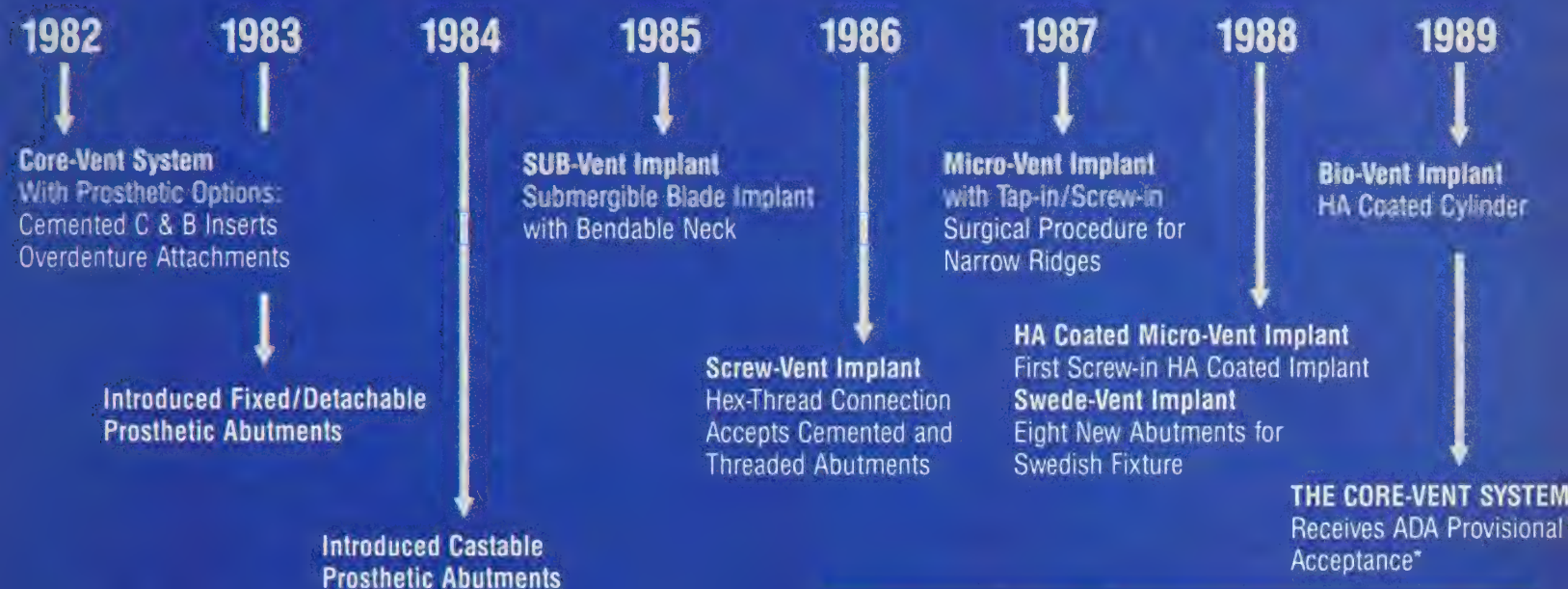


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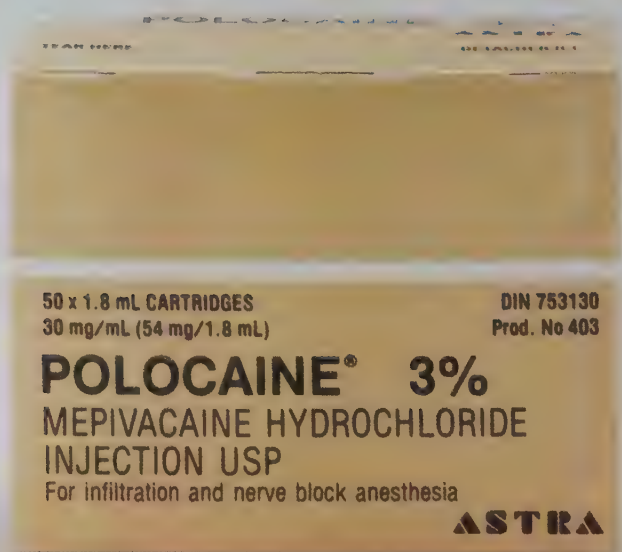
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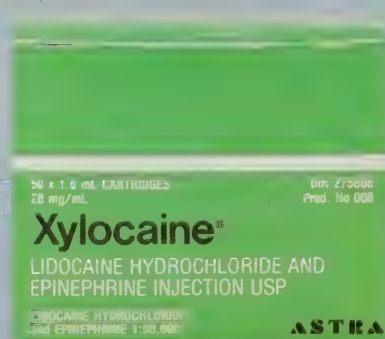
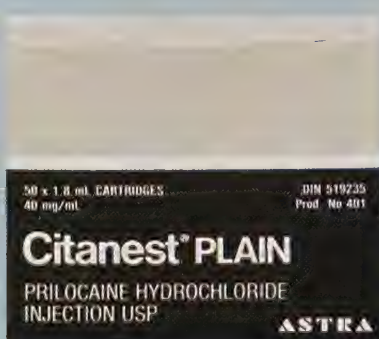


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Dental Technology Education in Canada*

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ABSTRACT

The dental technology education in Canada is described through a brief introductory historical overview with the emphasis placed on the present status of dental technology teaching institutions, accreditation system, admission policies, curriculum content, requirements for registration or certification and the comparison of provincial board examinations. The role and the responsibility of organized dentistry is stressed on shaping the future trends in dental technology.

Introduction

This article is an overview of the status of dental technology education in Canada. By dental technology we mean educational programs preparing dental technologists who support the oral health care team with their laboratory skills, but who do **not** work directly with the patient, as denturists or denture mechanics are permitted to do in some provinces. The educational preparation of the latter has been previously explained in a three-part article in this Journal – The Denturist Movement in Canada (JCDA No. 8 1981, pp. 521-533) by Dr. Michael MacEntee.

The Canadian Dental Association has

developed a position statement with respect to denture mechanics.

This article deals only with the preparation of dental technicians as distinct from dental mechanics or denturists. It should be read while bearing in mind that in the Canadian federal system the responsibilities of legislating the by-laws governing the Dental Technicians' Association, the creation of the Dental Technology Acts and the educational requirements, rest with the provincial legislatures and not with the federal government in Ottawa. This is summarized for the provinces in **Table 1**. The first Dental Technician Act was proclaimed in Quebec in 1944, to be followed shortly by Ontario (1946) and Nova Scotia (1949). However, other provinces did not follow the lead and some did not pass the necessary legislation until 1968 (Newfoundland) or 1974 (Prince Edward Island). One Province, Manitoba, was still without a Dental Technician's Act in 1987. Only five out of ten provinces have dental technology institutes.

Discussion

The beginning of organized dental technology education in Canada can be

traced back to April 1926, when a group of 12 dental technicians in Montreal, Quebec, organized themselves into a Study Club in order to promote a better quality of dental technology education in that Province.¹ It is of interest to note that the need for better communication between the dental technicians and the dental profession was recognized at such an early stage because the scientific meetings of the Montreal Study Club of Dental Technicians were open to dentists. To reciprocate, the Montreal Dental Club extended an invitation to the members of the Study Club of Dental Technicians to attend the annual Fall Clinics, an idea quite revolutionary and innovative 60 years ago. The American Prosthodontic Society, which also invites certified dental technicians to their scientific meetings, did not begin this policy until 1985. The Canadian Academy of Prosthodontics, although encouraging dental technicians to present table clinics at their annual scientific meetings, does not have "an open door" policy as yet.

In January 1931, the Montreal Study Club of Dental Technicians started publishing their quarterly journal, *The Montreal Dental Technician*, the first dental technology journal in Canada.

In 1948, another first in Canadian dental technology education was achieved with the formation of the "Junior Montreal Study Club des étudiants en Technologie

* Presented at the European Prosthodontic 10th Annual Conference, Symposium on Education in Prosthodontics, Sept. 4th, Oxford, United Kingdom. 1986.

TABLE I

Dental Technology Education in Canada 1986/87 Academic Year

PROVINCE	PROCLAMATION OF DENTAL TECHNICIANS ACT	LAST AMENDED	DENTAL TECHNOLOGY PROGRAMS PROVIDED	LOCATION	NAME OF THE SCHOOL
British Columbia	1962	1984	Yes	Vancouver	Vancouver Community College
Alberta	1961	1980	Yes	Edmonton	Northern Alberta Institute of Technology
Saskatchewan	1960	1987	No	—	—
Manitoba	—	—	No	—	—
Ontario	1946	1970	Yes	Toronto	George Brown College
Quebec	1944	1978	Yes	Montreal	College Edouard Montpetit
Nova Scotia	1949	1965	Yes	Halifax	Nova Scotia Institute of Technology
New Brunswick	1957	1974	No	—	—
Prince Edward Island	1974	Under Revision	No	—	—
Newfoundland*	1968	1985	No	—	—

*Under the Dental Auxiliaries' Regulations, pursuant to the Dental Act.

dentaire". It was the first study club formed by students of dental technology to enhance and to share their knowledge outside their formal training program.

Originally the training of dental technicians was done on the apprenticeship level in commercial dental laboratories. The first formal formation of commercial dental laboratories was the Association of Oral Prosthetic Laboratories,² legislated

in 1938. The word "oral" instead of "dental" was selected because the latter word was forbidden to be used by the technicians under the Quebec Dental Act. The only persons entitled to use the word "dental" in connection with their profession were dentists, registered with their respective Dental College. In 1940, this Association of Oral Prosthetic Laboratories sponsored a bill before the Quebec

government, citing "the needs, regulations and the requirements of the dental laboratories". It took four years before this bill became the first Dental Technicians Act in Canada when it was proclaimed in June 1944 for the Province of Quebec. Dealing with the educational aspect it stipulated that the dental technician apprentice must spend a period of five years in a licensed dentist's office or

TABLE II

Dental Technology Schools 1986/87 Academic Year

SCHOOL	PROG. EST.*	ENTRANCE REQUIREMENTS		LENGTH OF STUDY	NO. OF STUDENTS IN PROGRAM
		ACADEMIC	OTHERS		
Vancouver Community College	1985	High school diploma; Grade 12 Graduation (Includes Biology 12 and either Chemistry 11 or Physics 11)	— Manual dexterity test — Interview	2 years	30
Northern Alberta Institute of Technology	1963	High school diploma; Grade 12 Graduation (Includes Math 20 or 23)	— Manual dexterity test	2 years	36
George Brown College	1966	Ontario Secondary School Graduation Diploma with Credits in Chemistry, Physics, and Biology in Grades 11 or 12	— Manual dexterity test	6 semesters 102 weeks	60
College E. Montpetit	1968	Completion of High School diploma, (Includes Chemistry and Physics)	— Manual dexterity test — Interview	3 years	30
Nova Scotia Institute of Technology	1976	High school diploma; Grade 12 Graduation (Includes Biology 421, Chemistry 431, Physics 431 & Math 432)	— Manual dexterity test — Interview	2 years	12

*Date dental technology program was established.

TABLE III (Part 1)

**Comparison of Curriculum —
1986/87 Academic Year
Vancouver Community College**

**COMPLETE DENTURES —
COMMON CORE**

Complete Dentures — Basic Lab
Procedures
Complete Dentures — Theory I
Complete Dentures Construction
Complete Dentures — Theory II
Complete Dentures — Immediate
Dentures
Complete Dentures — Theory III
Complete Dentures Maintenance
Complete Dentures — Theory IV

REMOVABLE PARTIAL DENTURES

Removable Partial Dentures — Basic Lab
Procedures
Removable Partial Dentures — Theory I
Removable Partial Dentures — Cast
Partials
Removable Partial Dentures — Theory II
Removable Partial Dentures —
Maintenance
Removable Partial Dentures — Theory III

FIXED PROSTHODONTICS

Fixed Prosthodontics — Basic Lab
Procedures
Fixed Prosthodontics — Theory I
Fixed Prosthodontics Single Units
Fixed Prosthodontics — Theory II
Fixed Prosthodontics — Multiple Units
Fixed Prosthodontics — Theory III

DENTAL CERAMICS (OPTION A)*

Dental Ceramics — Single Units
Dental Ceramics — Theory I
Dental Ceramics — Multiple Units
Dental Ceramics — Theory II

*Students take either "Option A" or
"Option B"

ORTHODONTICS (OPTION B)*

Orthodontics — Basic Lab Procedures
Orthodontics — Theory I
Orthodontics — Appliance Construction
Orthodontics — Theory II

PRACTICUM

Dental Laboratory Procedures

in a commercial dental laboratory of a licensed dental technician who is a bona fide member of the Association of Dental Technicians of the Province of Quebec. Each licensed dental technician was legally obliged to teach the student-in-training so he could acquire the necessary knowledge required to pass the licensing examinations. This rather unsatisfactory arrangement was later supplemented by formal evening courses offering both theoretical and practical instructions, which eventually evolved into a formal training in educational institutions Table 2. The

TABLE III (Part 2)

**Comparison of Curriculum —
1986/87 Academic Year
Northern Alberta Institute
of Technology**

YEAR 1

Basic Health
Bacteriology
Materials
Physics
Effective Communications
Dental Anatomy & Terminology
Business
Mathematics
Complete Dentures
Partial Dentures
Crown & Bridge
Tooth Morphology
Physical & Leisure Education
First Aid

YEAR 2

Complete Dentures
Partial Dentures
Crown & Bridge Construction
Effective Communications
Psychology

first of the five dental technology schools in Canada was established within the Northern Alberta Institute of Technology in Edmonton, Alberta in 1963. The last one, attached to the Vancouver Community College was established in 1985.

An accreditation program initiated in 1973 by The Canadian Dental Association, sets out the guidelines for dental technology courses. In order to achieve approval, the program must meet or exceed the established standards. The CDA document on the "Requirements of a Program in Dental Technology" discusses and establishes the criteria on Educational Environment, Admissions, Curriculum, Faculty, Class size and Teaching, Facilities, Library, and Visual Aids.

In the Educational Environment section, the guidelines stipulate that the dental technology education centres establish and maintain a satisfactory liaison with the provincial dental technicians licensing authorities and maintain an advisory relationship with the local dental associations. These relationships should ensure that the training objectives of the programs satisfy and contribute to the needs of both professions.

The curriculum should involve both formalized training and on-the-job training. Instruction should be provided in the following topic areas employing lectures, demonstration, technical practice and practical experience as required on the list:

TABLE III (Part 3)

**Comparison of Curriculum —
1986/87 Academic Year
George Brown College**

1ST SESSION

Physical Education
Philosophy
French
Dental Anatomy I
Dental Morphology
Introduction to Removable
Prosthodontics I
Dental Materials

2ND SESSION

Physical Education
Philosophy
French
Dental Anatomy II
Introduction to Crown & Bridge
Introduction to Removable
Prosthodontics II

3RD SESSION

Physical Education
Philosophy
French
Crown & Bridge I
Complete Dentures I
Removable Partial Dentures I
Introduction to R.P.D. Frameworks

4TH SESSION

Physical Education
Philosophy
French
Crown & Bridge II
Complete Dentures II
R.P.D. II
R.P.D. Framework

5TH SESSION

Ceramics I
Crown & Bridge III
Removable Prosthodontics
Precision Attachments

6TH SESSION

Ceramics II
Crown & Bridge IV
Introduction into the profession
Orthodontics
Practice Management

Gross Anatomy	Fixed Partial Dentures
Dental Anatomy	Ceramics
Ethics and Jurisprudence	Orthodontic and Paedodontic Tech- nical Procedures
Terminology and Nomenclature	Maxillo-Facial Tech- nical Procedures
Dental Materials and Metallurgy	Clinic/Laboratory Relations
Casting Procedures	Orientation to the Dental Health Team
Complete Dentures	Occlusion & Articula- tion Theory & Practice
Removable Partial Dentures	Equipment Maintenance
Repairs, Rebases and Relines	Business Administration

TABLE III (Part 4)

**Comparison of Curriculum –
1986/87 Academic Year
College E. Montpetit**

SEMESTER 1 – 15 WEEKS Oro-Facial Anatomy Dental Materials Dental Laboratory and Materials I Biology Chemistry and Science of Dental Material Language and Communications I Human Relations
SEMESTER 2 – 19 WEEKS Oro-Facial Anatomy II Dental Laboratory and Materials II Biology Biophysics Language and Communications II Human Relations
SEMESTER 3 – 15 WEEKS Functional Anatomy I Dental Laboratory and Materials I Metallurgy Human Relations Small Business Management
SEMESTER 4 – 19 WEEKS Functional Anatomy Dental Laboratory and Materials II Metallurgy Psychology Small Business Management
SEMESTER 5 – 15 WEEKS Dental Laboratory and Materials I Language and Communications Human Relations Psychology
SEMESTER 6 – 19 WEEKS Dental Laboratory and Materials II Language and Communications Psychology

TABLE III (Part 5)

**Comparison of Curriculum –
1986/87 Academic Year
Nova Scotia Institute of
Technology**

First Year (Terms 1 and 2) Dental Materials Head and Oral Anatomy Tooth Drawings and Carvings of the Upper Arch Complete Dentures Orthodontics Cast Partial Dentures
Second Year (Terms 3 and 4) Tooth Drawings and Carvings of the Lower Arch Complete Dentures Orthodontics Cast Partial Dentures Fabrication of Ceramic Crown and Bridge

TABLE IV

**Requirements for Registration (or Certification) for an RDT (CDT)
1986/87 Academic Year**

		LICENSING BOARD EXAMINATION	
		WRITTEN	PRACTICAL
British Columbia	Two years at the Vancouver Community College with graduation and a minimum of one year of practical work experience under a registered dental technician. NOTE: previous to September 1985, four years of practical work experience were required.	YES	YES
Alberta	Five years of practical training under a licensed technician or 3 years of practical training under a licensed technician when graduate of the Northern Alberta Institute of Technology.	YES	YES
Saskatchewan	Minimum of 4 years of apprenticeship under a licensed technician or a dentist. If the candidate is a licensed technician from another province, only 1 year of apprenticeship under a licensed technician or a dentist is required.	YES	YES
Manitoba	There is no legislature pertaining to the certification of dental technicians.	NO	NO
Ontario	1. Served in Ontario as a dental technician in the employment of a dentist or a dental technician for a period of at least 4 years, or 2. Successfully completed an approved program in dental technology at The George Brown College of Applied Arts and Technology and has served 1 year under the supervision of a dentist or a registered dental technician.	YES	YES
Quebec	Successful completion of the 3-year programme in dental technology at the College Edouard-Montpetit; for candidates outside of the province a satisfactory equivalent diploma or proof of study acceptable to the Dental Technician Board.	IN PREPARA- TION	YES
Nova Scotia	Minimum of 4 years apprenticeship under a licensed technician; 2 years only if attended and graduated from the Nova Scotia Institute of Technology.	YES	YES
New Brunswick	Minimum of 4 years apprenticeship under a licensed technician or a dentist.	YES	YES
Prince Edward Island	None at the present time; the 1974 Dental Technology Act is under revision.	NO	NO
Newfoundland and Labrador	Minimum of 4 years (immediately preceding the application) of apprenticeship under the supervision of a registered dental technician in a laboratory recognized by the Newfoundland Dental Board or acceptance by Board in its discretion of equivalent.	NO	NO

The Council on Education and Accreditation of the Canadian Dental Association is presently conducting an extensive review of this document.

Dental Technology schools require a high school diploma for admission. Certain subjects such as biology, physics, chemistry and mathematics are usually

TABLE V

Provincial Licensing Board Examinations 1986/87 Academic Year

PROVINCE	COMPOSITION OF THE BOARD			EXAMINATIONS									
				Written					Practical				
	Technicians	Dentists	Other: Lay members Hygienists	Complete Dentures	Removable Prostodontics	Crown and Bridge	Ceramics	Orthodontics	Complete Dentures	Removable Prostodontics	Crown and Bridge	Ceramics	Orthodontics
British Columbia	1	—	4	X	X	X	X	in the process of being created	X	X	X	X	in the process of being created
Alberta	3 one of which is from the N.A.I.T.	1	1	X	X	X	X	Combined X	X	X	X	Combined X	X
Saskatchewan	3	2	—	X	X	X	Combined X	X	X	X	X	Combined X	X
Manitoba	This province does not have any regulations pertaining to the licensing of dental technicians.												

compulsory and must be taken in grade eleven or twelve. A manual dexterity test is mandatory for all applicants. Although all dental technology schools offer basically similar programs **Table 3**, some, as the newly established Vancouver Community College, offer the option of earlier specialization.

The students at the Vancouver Community College have a choice of Option A, which gives them specialization in the field of Ceramics or they take the specialized program in Orthodontics as Option B. All curricula are of a two school years duration with the exception of George Brown College and College E. Montpetit. Some schools offer courses on "Small Business Management" (College E. Montpetit), "Practice Management" or "Business Administration" (George Brown College, Northern Alberta Institute of Technology). Others, the Vancouver Community College and the Nova Scotia Institute of Technology do not.

The **dental technician graduates** can seek employment in commercial dental laboratories, in private or group dental practices. They can be employed as members of the Armed Forces dental unit, in various government health services, in intramural dental laboratories of the den-

tal faculties or work in hospital dental departments. The graduate has to work as an apprentice for several years before being eligible to submit himself/herself to written and practical licensing provincial board examinations **Tables 4 & 5**.

This training period of apprenticeship or practical work has to be served under a licensed, registered technician. In some provinces, the candidate can work also under the supervision of a dentist who has his own dental laboratory. The years spent as a student in an approved program of dental technology are being credited toward the total apprenticeship years of the candidate within the province in which the school is located. Licensing Board Examination, both written and practical, is mandatory in all provinces except in Newfoundland, Prince Edward Island, and in Manitoba. The composition of the Provincial Licensing or Examining Board varies greatly. Six provinces have both technicians and dentists as members on the Board, two have no dentists but lay members with technicians on the Board, one province has also a dental hygienist as a member and two do not have any licensing mechanism for dental technicians. In most provinces, written and practical examinations are in Com-

plete Dentures, Removable Partial Dentures, Crown and Bridge and Ceramics. These last two subjects are frequently combined into one. Orthodontics is a separate written and/or practical examination in five out of ten provinces.

If successful, the candidate can then be known as a Registered, or Certified Dental Technician. The majority of technicians usually specialize in one of the five fields: ceramics, removable partial dentures, fixed partial dentures, complete dentures or orthodontics.

Future issues

Dental technologists would like to see the development of a degree program in dental technology in the future for candidates willing to go into research, teaching or specialty fields.

At the present, there is no portability of Dental Technology diplomas between the provinces. There is no Canadian Dental Technology Association which could cooperate in the Canadian Dental Association's accreditation process established for educational programs preparing technologists. For this and a number of other reasons, the CDA process has not been implemented and no programs are currently accredited. Dental technologists

TABLE V (Part 2)

Provincial Licensing Board Examinations 1986/87 Academic Year

PROVINCE	COMPOSITION OF THE BOARD				EXAMINATIONS									
					Written					Practical				
	Technicians	Dentists	Other: Lay members	Hygienists	Complete Dentures	Removable Prosthodontics	Crown and Bridge	Ceramics	Orthodontics	Complete Dentures	Removable Prosthodontics	Crown and Bridge	Ceramics	Orthodontics
Ontario	3	1	1		X	X	X	X	X	X	X	X	X	X
Quebec	6	—	2	—	None at the present time					X	X	Combined X	X	—
Nova Scotia	4	2	—	—	X	X	X	X	X	X	X	X	X	X
New Brunswick	3	1	—	—	X	X	Combined X	X	X	X	X	Combined X	X	X
Prince Edward Island	Does not exist at the present time				None at the present time The 1974 Dental Technology Act is under revision.					None at the present time				
Newfoundland and Labrador	1	5	1	1	NONE					NONE				

are also exploring the establishment of their own recognition process.

Preliminary discussions are occurring among the Maritime provincial dental technicians' associations of Nova Scotia, New Brunswick and Prince Edward Island on the subject of accepting the graduates of the Nova Scotia Institute of Technology by their respective examining boards.

Thus, a regional board would be established for the whole Atlantic area with the inclusion of Newfoundland and Labrador. The precedent already exists in dentistry. Dalhousie University Faculty of Dentistry is supported by the four Atlantic provinces. The applicants are admitted from the whole Atlantic region and the four provincial dental boards accept its dental graduates. From the acceptance of a regional board, the next step to follow would be the establishment of portability and reciprocity of dental technicians diplomas with the rest of the provinces on the federal level and the establishment of a Canadian Dental Technicians Association.

Conclusion

As a member of the dental health team, the dental technician makes a major contribution to the practice of dentistry. Therefore, the following should occur: (1) dental education must ensure that dentists understand the technical implications of their work orders, and the dentist's responsibilities towards the dental laboratory technicians; (2) organized dentistry must be actively involved in the qualification and training status of the dental technician; and (3) as technology develops, there must be adequate training programs, including continuing education courses for dental technicians, to meet the future requirements in the delivery of the dental health care.

Acknowledgement

The author wishes to thank the various provincial Dental Technician Associations as well as the Directors of the Dental Technology schools for their help in compiling this article.

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Tables

- I Dental Technology Education in Canada
- II Dental Technology Schools
- III Comparison of Curricula
- IV Requirements for Registration
- V Licensing Board Examinations



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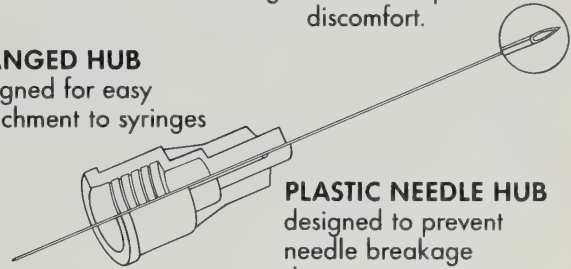
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REMOVING THE MANDIBULAR THIRD MOLAR:

Neurosensory deficits and consequent litigation

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ABSTRACT

Neurosensory dysfunction, on an iatrogenic basis, appears to be increasing at an alarming rate in the oral surgical section of dental practice. This is particularly so with respect to the impacted lower wisdom tooth. With changing social mores and more sophisticated consumerism, increasing litigious tendencies within the general population and a more informed public, there is a parallel increase in malpractice lawsuits related to this complication. This article presents the documentation supporting this impression and discusses methods of diminishing the likelihood of successful litigation against the dentist. Clinical aspects of mandibular third molar removal are explored with a view to surgical approach and anatomic awareness relevant to the subject. The current status of informed consent is presented, along with one example of a written form which might be applicable under the circumstances.

SOMMAIRE

En chirurgie buccale, les désordres neuro-sensitifs provoqués par les dentistes semblent augmenter à un rythme alarmant. Tel est le cas surtout lorsqu'il s'agit d'une dent de sagesse enclavée. Au fur et à mesure que la société change, que les consommateurs se protègent mieux, que les cas de litige tendent à se multiplier dans le grand public et que celui-ci est mieux renseigné, on note une augmenta-

tion parallèle des poursuites pour faute professionnelle reliées à cette complication. Dans cet article, on présente des faits appuyant cette impression et on expose des méthodes pour diminuer les chances de succès des clients qui poursuivent des dentistes. On étudie les aspects cliniques touchant l'extraction de la troisième molaire mandibulaire en tenant compte de l'approche chirurgicale qu'il convient d'adopter et des connaissances anatomiques qu'il faut avoir à ce sujet. On présente la situation actuelle touchant le consentement éclairé du patient ainsi qu'un exemple de formulaire qu'on peut utiliser en pareille circonstance.

As an oral and maxillofacial surgeon with 30 years' experience, the author has become aware of a significant increase in litigation occurring in the Province of British Columbia with respect to nerve injuries associated with the removal of teeth, particularly the mandibular third molar. During the first half of the author's career, he cannot recall any incident of such litigation in this community involving either himself or his colleagues. In the last 15 years, however, the incidence of such claims has not only appeared but is increasing exponentially.

To substantiate this impression, figures were solicited from CDSPI, both nationally and provincially, pertaining to nerve injury claims appearing on their records (Fig. 1). Although some of these lawsuits have been defended successfully on behalf of the dentist-insured, others have

concluded with out-of-court settlements or judgments against the practitioner.

Concern for this situation led the writer to speculate as to the reasons why such a trend should occur. Are more impacted mandibular third molars being removed than ever before? Are such third molar extractions becoming increasingly difficult? Are the practitioners less well-trained than previously? Are the highly efficient, high-speed rotating instruments now used in dentistry so efficient that the clinician rapidly finds himself in critical anatomical territory? Are practitioners entering into procedures which are really beyond their level of competence? These are just a few of the questions which arose when considering the reasons for this dilemma which those in this area of dentistry are facing.

Some noteworthy cases have occurred in British Columbia which have set precedents and are often cited by litigants and their legal counsel across the country. The decision in the Rawlings vs. Lindsay¹ case of inferior alveolar nerve injury was found in favour of the plaintiff, and the insurance carrier, through its lawyers, advised against appeal. This decision was based on the evidence of the plaintiff who stated that she had not been informed by the oral surgeon that nerve injury might occur, nor had she been informed that the latter could be permanent, in the course of removing her impacted mandibular third molars. In Diack vs. Bardsley,² the decision was in favour of the dentist despite the fact that the patient alleged

that he had not been warned that there might be a risk of temporary or permanently altered sensation in the lower lip and chin. In this case, the defendant oral surgeon insisted that the patient had been warned of these risks but no notes had been made on the chart to that effect and he was unable to remember the particular patient. The defendant indicated that it was his usual and customary practice to forewarn patients of this hazard when it existed. The court was faced with the dilemma of trying to determine what the dentist actually told this particular patient on the basis of what was stated in similar circumstances. There was no suggestion that the defendant had been negligent. The questions facing the court were whether the information provided regarding the risks of the procedure were broad enough and, if information was inadequate, would this be a reason to find for the plaintiff. In Canadian law, the test that is to be applied is whether a reasonable person in the patient's position would have consented to the procedure even if he had been warned adequately. Mr. Justice McEachern concluded that even if he had received an adequate warning, the patient would have likely consented to the operation and therefore would have encountered the same risks as he did without being properly warned. As a result, judgment was found in favour of the defendant.

The following precedents are significant and as practitioners we should pay heed. In *Rawlings vs. Lindsay*,¹ Madam Justice McLachlin commented on precedents set in the Supreme Court of Canada. "... It is now clear that a medical person is obliged to disclose, without being questioned, 'the nature of the proposed operation, its gravity, any material risks and any special or unusual risks attendant upon the performance of the operation.'": *Hopp vs. Lepp*, supra, at 660. The terminology of "material", "special", and "unusual" risks has in the past given rise to confusion. However, a fair summary of the effect of those decisions, in my view, is that a medical person must disclose those risks to which a reasonable patient would be likely to attach significance in deciding whether or not to undergo the proposed treatment. In making this determination, the degree of probability of the risk and its seriousness are relevant factors. Thus an "unusual" or improbable risk should be disclosed if its effects are serious. Conversely, a minor result should be disclosed if it is inherent in or a probable result of the process".

Madam Justice McLachlin continues, "Other factors which may be relevant in



Fig. 1. Number of claims relating to paraesthesia following surgery and injections.

determining a reasonable standard of disclosure include the gravity of the condition to be treated, the importance of the benefits expected to flow from the treatment and the intellectual and emotional capacity of the patient to accept the information without such distortion as to prevent any rational decision at all. Again, if the danger is one common to all operations, for example, the risk of infection, it may not be necessary to discuss it at all. In short, the determination of the appropriate standard of disclosure is a complex matter 'to be decided in relation to the circumstances of each case': *Hopp vs. Lepp*, supra, at 660. While evidence of standards of disclosure prevailing in the profession may be relevant, it is not conclusive. The responsibility for weighing these factors in determining the appropriate standard and whether it has been reached ultimately falls upon the court: *Reibl vs. Hughes*, supra".

The incidence of nerve injury litigation in North America appears to be rising at an alarming rate. In Washington State, paraesthesia accounted for nearly 25 per cent of the claims in 1984.³ A Dade Circuit Court jury awarded an ex-airline hostess \$300,000.00 for suffering a numb lower lip following the removal of an impacted wisdom tooth by a general practitioner.⁴ Consultation with CDSPI, the major malpractice carrier serving Canadian dentists, reveals that the number of nerve injury litigation cases in their files has increased from 14 in 1981 to 34 in 1986, an increase of 143 per cent.⁵ These figures include paraesthesia following surgery and injection. They represent 13.6 per cent (1983) of all malpractice claims against Canadian dentists.

Presently, the author is concerned with possible malpractice litigation whenever

removing impacted third molars, whereas at the outset of his career, 30 years ago, this thought never entered his mind.

CDSPI reveals the following data: "In the period 1978-1980 the malpractice section of the Canadian Dentists' Insurance Program produced a low of only seven claims to a high of 33 claims for every 1,000 dentists in the program".⁶ In 1981, this figure increased to 35 claims for 1,000 dentists. The forecast, based on projection, was that by 1993 there would be an incidence of 70 per 1,000 cases if the trend continued. Similarly, in the U.S.A., the members of the American Association of Oral and Maxillofacial Surgeons have been experiencing a startling increase in claims. From 1984-1986 the St. Paul Company, underwriters of the AAOMS program for that period, documented an increase in claims reported from 93 to 1443 (1551.6 per cent increase) and in the same period a claims paid figure of \$31,989.00 to \$2,683,778.00 (8389.6 per cent increase).⁷ This is an astonishing increase for a two-year period.

The National Institutes of Health held a Consensus Development Conference on The Removal of Third Molars in November, 1979, in the U.S.A.⁸ This workshop, in considering the morbidity of third molar removal, recommended that patients should be informed of potential surgical risks, including any permanent condition that has an incidence greater than 0.5 per cent or any transitory condition that occurs with an incidence of 5 per cent or more. They concluded, "On this basis available data indicate that for routine cases, patients should be informed about hemorrhage, pain, swelling, alveolar osteitis, trismus, and nerve injury." Since there is documentation in the litera-

ture which indicates that altered labial sensation in association with mandibular third molar surgery can run over 5 per cent (e.g., Howe and Poyton — 5.2 per cent⁹ and Frank — 5.3 per cent¹⁰) even on a temporary basis, the requirement is implied that a warning should be routinely given for inferior alveolar nerve injury. Furthermore, Goldstein¹¹ reports a 1.3 per cent incidence of lingual nerve dysesthesia in association with the removal of mandibular third molars, 80 per cent of which failed to resolve within two years. We are thus confronted with a permanent condition having an incidence of over 1 per cent. Again, the requirement may be inferred that a warning should be given routinely about the possibility of lingual nerve injury in lower third molar surgery.

Clearly, Canadian law is changing in respect to nerve injury secondary to mandibular third molar surgery. It now appears prudent for dentists to advise their patients of all material, special and unusual risks, even if a risk is as low as 1 per cent.

Why then are dentists reluctant to adopt a comprehensive informed consent policy in their practice? According to Dr. Donald S. Dana, Chairman of the American Association of Oral and Maxillofacial Surgeons' Committee on Professional Liability and Insurance, "In many situations it is a fear that the patient would be unduly upset hearing a recital of the risks involved in a given procedure".¹² Lorne Rozovsky, Q.C., an Adjunct Associate Professor of Law and Medicine and Lecturer in Dentistry at Dalhousie University, states, "There is no excuse for giving an inadequate warning of the risks on the basis that the patient might refuse a much needed procedure. The patient's right over his own body entitles him to make his own decisions, however foolish those decisions may be".¹³ He continued, "There is no excuse for not adequately warning a patient of the risks on the basis that no other dentist in the office, or in town does this, or that the patient did not ask".

Dr. Dana states "As far as I am concerned, it is inexcusable not to use informed consent. In legal terms, you lose by default if you fail to use it. . . . I foresee a day when failure to use informed consent in your office will make you uninsurable". And finally, "But, more important to recognize is that informed consent is a basic standard of care that patients deserve, and that those who do not practice it are acting below the standard of care."

With regard to the mandibular third

molar, what are some of the acknowledged precautions which should be taken to avoid the likelihood of nerve injury, either lingual or inferior alveolar? Certainly, suitable radiographs are essential. The panoramic variety of radiograph is often acceptable, providing there is no proximal anatomy which is clearly vulnerable and at risk. In the latter instance, periapical radiographs should be used to supplement the panoramic film since they always provide better detail, when properly exposed.

The location of the incision is critical. The clinician should be aware of how the lingual nerve closely approximates the medial surface of the mandible in the third molar region. The anatomical cadaver studies of Kiesselbach and Chamberlain¹⁴ showed that in 62 per cent of the specimens, the nerve was in actual contact with the bone and in 17.6 per cent of the dissections, the nerve was at the level of the alveolar crest or higher. Indeed, since in one of their cases the nerve passed through the retromolar pad 2.0 mm. above the lingual plate at the level of the occlusal surface of an impacted third molar, one must conclude that the incision in this area should always be lateral to the retromolar pad.

Manipulation on the lingual side of the mandibular third molar should always be avoided if at all possible for reasons noted above. Just stretching the lingual nerve, e.g., by elevating a lingual mucoperiosteal flap, can result in paraesthesia. A linguoversion-postured third molar can cause stretching of the lingual nerve when the latter is involved in the forced elevation of lingual soft tissues during the delivery procedure.

The very high speed and incredibly efficient rotating instruments now at our disposal are, in a sense, a mixed blessing when it comes to surgery. When the treatment planning for the removal of a vertically impacted mandibular third molar calls for sectioning transversely in a buccal to lingual direction, the operator should never cut all the way through the tooth structure. Rather, a section two-thirds of the way through the tooth will permit the insertion of a straight, displacement elevator and, by torquing the latter, will result in severance of the two portions of tooth structure without endangering the lingual nerve. The clinician must always be mindful of the angular projection and trajectory of the bur, since, although the point of entry into the occlusal surface of the third molar may be midway, the actual tip could be through the lingual surface of the tooth and even through the lingual cortical plate. The

author has exercised the above precautions for years but still finds on occasion, to his amazement and consternation, that there is evidence of a bur hole in the lingual wall of the socket following the removal of the third molar.

Although the radiograph may show that the apex of the third molar scheduled for removal is 1.0 or 2.0 mm. distant from the roof of the mandibular canal, the operator cannot assume that he/she can proceed with impunity. Ankylosis or pseudo-ankylosis, an unusually thin periodontal ligament, denser than normal bone, dilacerated roots, bulbousness of the roots, thin, spindly roots, can all result in the need to use a rotating instrument to either section tooth structure, relieve bone, or both. Since the majority of mandibular canals lie either at the apex of the third molar root or slightly buccal to it,¹⁵ the chances of encountering that nerve with the bur increase as you pursue the elusive tooth remnant apically. Thus, lack of apparent contact between tooth root shadow and mandibular canal shadow should not instil a sense of complacency in the operator. One should also be mindful of the fact that the main objective of sectioning a tooth is to reduce the amount of bone removal necessary to deliver the impacted tooth.

The well-known anomalies of root grooving, notching and perforation, of course, should automatically create a high index of concern and caution for even the most experienced clinician.

Attention should also be paid to the obstinate tooth root or, more commonly, root apex, which resists retrieval despite a concerted effort and which resides on the roof of the mandibular canal or proximate to it. There is a moment of decision-making to be recognized at this point, whereby the operator must pause, swallow his/her professional pride, and state to the patient that further pursuit of the root portion could well eventuate in nerve injury. If this is the case, the dentist should take a radiograph for base reference purposes, use it as a visual aid to explain to the patient the basis for his/her decision, and advise monitoring the area on a regular basis with follow-up radiographs. In the absence of symptoms, it is the author's practice to advise such radiographic follow-up at two-year intervals.

The general practitioner of dentistry should also be mindful of the availability of an expert in surgery of the jaw — the oral and maxillofacial surgeon. Surgical skills, as with other dental skills, vary tremendously among general dentists. Each dentist must decide whether or not

a given impaction case lies within his level of experience and competence. It is important that the practitioner be absolutely honest in this self-assessment, and not hesitate to refer the patient should the surgical challenge lie beyond his or her skills. It may be that the patient's interests would best be served by referral to an oral and maxillofacial surgeon. This should not be a matter of ego — it is prudence and common sense. Furthermore, the more urban the location of the practitioner, the more the burden rests upon him/her to refer difficult cases.

There are numerous ways in which practitioners can protect themselves from liability. First and foremost, of course, surgery should be performed on sound, accepted principles. Skills and knowledge should continuously be upgraded by reading journal articles, and by attending study clubs, continuing education courses, and mini-residencies. Furthermore, practitioners should remain within the parameters of their own personal skills and experience, and carefully assess the case before embarking on surgery. Despite the foregoing, however, the best intentioned practitioner can still fall victim to the infamous "surgical misadventure".

Other non-clinical forms of protection from liability are also worth noting. Informed consent is one of the best, but is not an infallible form of protection. However, verbal consent no longer is adequate. Nor is it sufficient to simply make a notation in the patient's chart that he/she was provided with all the necessary warnings about the possible risks. Written informed consent is the standard of the day in so far as the legal community is concerned. To emphasize the latter the House of Delegates of the AAOMS, in 1986, passed a resolution requiring their malpractice insurance underwriter to insist upon their members' use of written informed consent in order to qualify for eligibility status as an insured participant. Without a doubt, the practitioner who utilizes a written and signed consent form is the most defensible, according to Dr. Dana, and it is likely that most, if not all, defence attorneys would agree with him. A sample of a written informed consent which might serve as a model for oral and maxillofacial surgery is offered herein (Fig. 2).

Another extremely important means of defence is a clear, accurate and legible record of the surgical procedure, including complications and unusual events. Since malpractice cases may be heard a number of years after the fact, detailed records describing the surgery will

impress the court since one's memory may not be relied upon.

Summary

Litigation with respect to nerve injuries in association with mandibular third molar surgery is increasing to an alarming degree, nationally and internationally. Precedents are being set in the courts, of which Canadian dentists should be aware. The regular use of informed consent should become a way of life in the practice of dentistry and particularly in oral and maxillofacial surgery. If a cap is to be kept on the explosion of malpractice litigation and its consequent soaring costs, practitioners must be mindful of the basic principles of third molar surgery, ever vigilant as to anatomical and surgical hazards which pertain, and fully protected by using appropriate informed

CONSENT TO ORAL AND MAXILLOFACIAL SURGERY

SAMPLE

1. I, the undersigned, JOHN DOE hereby authorize and request Dr. (s) I. M. CAREFUL and/or _____, to perform the following oral and maxillofacial procedure(s) upon me:

the removal of my four wisdom teeth

And, I consent to the performance of the above procedure(s), as well as to the performance of such additional/alternative procedures as in the judgment of the above doctor(s) may be necessary to restore and/or preserve my overall dental health, as well as to treat the particular dental disorder described to me as:

Four Impacted Third Molars

2. I also authorize and request the administration of local or general anesthesia as may be deemed advisable by the above named doctor(s); and I hereby consent to the administration of said anesthesia as the said doctor(s) deem(s) advisable.

3. It has been explained to me, and I understand that success of the aforesaid surgical procedure(s) and treatment is not guaranteed or warranted and, in addition, I understand that such success cannot be guaranteed or warranted.

4. Such alternative treatment methods to the surgical procedure(s) above described as are available to treat the aforesaid dental disorder in my case were fully described to me prior to the time I executed this consent to oral and maxillofacial surgery as witnessed by my signature and the date below.

5. Finally, such risks and complications as may ultimately develop and/or immediately follow upon the above mentioned procedure(s) and administration of anesthetics have been fully explained to me, including, but not limited to:

Anesthesia and/or paresthesia (numbness tingling) of my lower lip and chin, on one or both sides, either temporary or permanent

DATED: January 2, 1988

SIGNED: John Doe

WITNESSED: Mary Smart

Fig. 2. Sample of consent form.

consent forms and maintaining accurate descriptive records. Δ

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Reprint requests to Dr. Swanson.

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NIFEDIPINE-INDUCED GINGIVAL HYPERPLASIA

W.Z.W. Yusof, BDS, MSc
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ABSTRACT

Nifedipine-induced gingival hyperplasia was first reported in 1984. Nifedipine is a relatively new drug used in the treatment of ventricular arrhythmias and angina. This article reports a case of gingival hyperplasia induced by the drug and reviews the cases reported so far in the literature.

SOMMAIRE

C'est en 1984 qu'on a signalé pour la première fois un cas de balcon (hyperplasie) gingival causé par la nifédipine. La nifédipine est une drogue relativement nouvelle qu'on utilise pour soigner les angines et les arythmies ventriculaires. Dans cet article, il est question d'un cas de balcon gingival causé par cette drogue et des cas signalés jusqu'à maintenant dans les publications.

Several medications have been reported to induce gingival hyperplasia. The most common is phenytoin,

which was first reported in 1939.¹ This drug is used in the treatment of epileptic seizure activity.² Other drugs with the same side effect, although rarely observed, are sodium valproate,³ primidone⁴ and phenobarbital.⁵ These are all anti-convulsant drugs. Recently, this phenomenon has occurred with two relatively new drugs, namely cyclosporine (cyclosporin-A)⁶ and nifedipine.⁷

Nifedipine is used in the treatment of ventricular arrhythmias, vasospastic angina and chronic stable angina.⁸ This drug acts by inhibiting the extracellular calcium influx across the membranes of cardiac and vascular smooth muscles without changing the serum concentration.⁸ This reduces the contractile process of the cardiac muscles, thereby reducing the utilization of oxygen by the myocardium. Concurrently, the vascular smooth muscles of the main coronary and systemic arteries have their contractile process also reduced by nifedipine, resulting in relaxation and prevention of coronary artery spasms.⁸ Side effects and adverse reactions to this drug include hypoten-

sion, headaches, weakness, muscle cramps, flushing, dizziness, tremor, joint stiffness, peripheral edema, dermatitis, pruritus and urticaria.⁸ Recently, gingival hyperplasia has occurred with this drug.^{7,9,10}

Case Report

A 49-year-old Malay male was referred to the Periodontal Clinic for management of gingival swelling. He gave a history of having swollen but painless gingiva for almost two years. He had ischemic heart disease which had been detected nine years previously and had been on medication since that time. Otherwise, his medical history was negative.

An oral examination revealed nodular and fibrotic swellings of the gingiva labially which were more marked in the anterior region of both arches. The swellings were minimal on the lingual and palatal anterior regions. The interdental papillae were hyperplastic and extended laterally onto the crown surfaces (Fig. 1). The involvement of the marginal gingiva was minimal. The clinical appearance of the gingiva was similar to that of phenytoin-

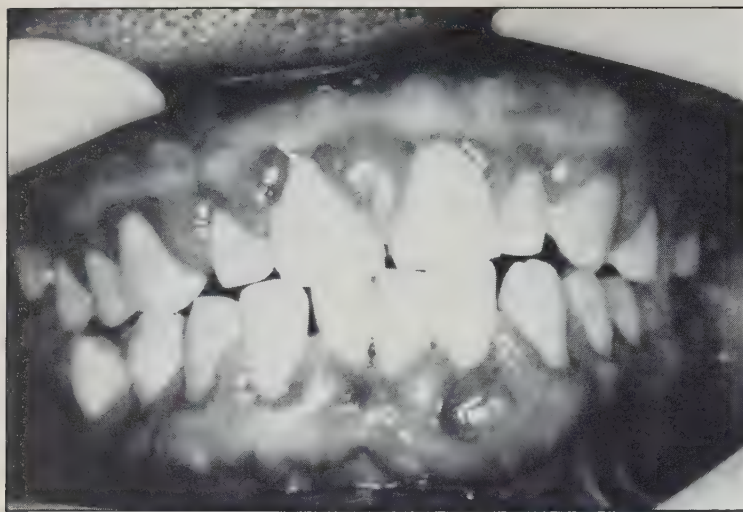


Fig. 1. An intra-oral photograph showing the hyperplastic papillae of both arches in the anterior region. Note also the involvement of the marginal gingiva in the lower anterior region.



Fig. 2. A photomicrograph showing changes in the epithelium and connective tissue. Note acanthosis and thickening of the epithelium; fibrosis and chronic inflammatory cell infiltration of the lamina propria. (Hematoxylin and eosin X 40).

induced gingival hyperplasia. The patient's oral hygiene was unsatisfactory.

The patient was again questioned about his medical and family histories in order to exclude iatrogenic and hereditary causes, but the history was negative. The patient revealed that he had taken propranolol 40 mg t.i.d. for the first seven years, as medication for the ischemic heart disease. Two years ago his physician reduced the dosage to 10 mg t.i.d. and added nifedipine 10 mg t.i.d. to the regimen.

A biopsy was performed, which consisted of the interdental papilla from an area between the maxillary central incisors. It showed hyperkeratosis and marked hyperplasia of the overlying

epithelium. There was some degree of acanthosis with elongated rete pegs. The epithelium was about 1.5 mm thick. The underlying connective tissue showed fibrosis with abundant fibroblasts and the presence of chronic inflammatory cells and capillaries (Figs. 2 and 3).

The patient's physician was consulted concerning the discontinuation of nifedipine. This was carried out but was reinstituted later when the patient developed chest pains, especially on exertion.

Discussion

Very few cases have been reported in the literature concerning nifedipine-induced gingival hyperplasia. Lederman et al.⁷ were the first to report a case in 1984. Barak et al.⁹ noted five cases with clinical signs of gingival hyperplasia and another report was by Lucas et al.¹⁰

It is difficult to differentiate between gingival hyperplasia induced by different etiological agents clinically and histologically. Gingival hyperplasia induced by drugs such as phenytoin and cyclosporine are similar in clinical and histological appearance.^{7,9} This is also true for other hyperplastic gingival conditions such as idiopathic and hereditary gingival fibromatosis, and reactive gingival hyperplasia due to local irritation and hormonal changes.¹¹ Thus the diagnosis is based on clinical and histological findings, together with a comprehensive history-taking to rule out the above-mentioned factors.

The exact mechanism for nifedipine-induced gingival hyperplasia is unknown. It has been proposed that for phenytoin gingival overgrowth, the dynamic balance of production and destruction of fibroblasts is altered. Phenytoin or its metabolites may act on a sub-population of fibroblasts to produce collagen and

protein.¹² This imbalance is aggravated by inactivity of the collagenase enzyme secreted by these cells.¹³ This might also be the case for nifedipine but it has yet to be shown ultrastructurally and histochemically. An initial report has shown that the hyperplastic response is due to an increase in the ground substance.¹⁰

Not all patients receiving nifedipine develop gingival hyperplasia. Barak et al.⁹ reported an incidence of 15 per cent in a group of 34 patients on nifedipine therapy. For phenytoin, the reported incidences range from 0 per cent to 85 per cent,¹⁴ but most would agree to an estimated incidence of 40 to 50 per cent.¹⁵ An incidence of 25 per cent was reported for cyclosporine therapy.¹⁶

Plaque seems to play a role in inducing gingival hyperplasia in phenytoin, nifedipine and cyclosporine therapies. Thus, plaque control by the patient and dentist is of prime importance in the prevention and treatment of drug-induced gingival hyperplasia.¹⁷ Gingivectomy/gingivoplasty could be carried out if hyperplasia persisted after initial periodontal therapy and despite good oral hygiene. It has been noted that nifedipine-induced gingival hyperplasia decreased with symptomatic improvement after the drug was withdrawn.⁷

Summary

Very few cases of nifedipine-induced gingival hyperplasia have been reported. The patient in this case presented with clinical and histological features similar to phenytoin-induced gingival hyperplasia. Only careful history-taking can confirm the diagnosis. As for management, the primary preventive measure is to maintain a high standard of oral hygiene and the elimination of gingival irritation. Δ

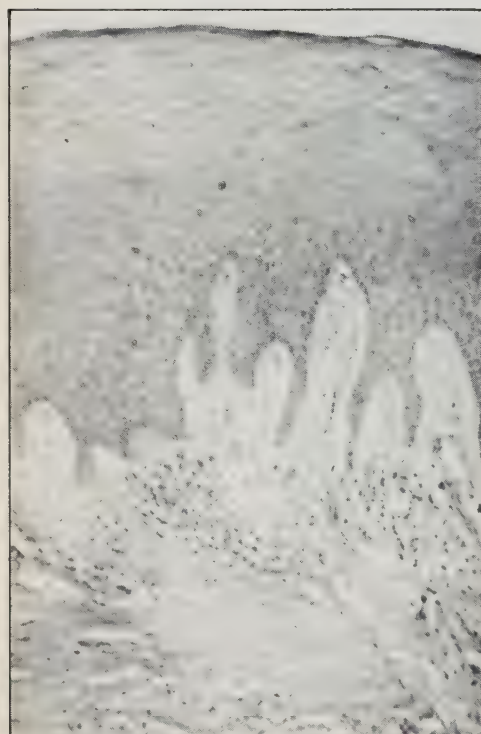


Fig. 3. A higher magnification of Fig. 2 (X 100).

Acknowledgement

The author wishes to thank Mr. L.S. Koh for the histological slide preparation.

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LA SPIRAMYCINE

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RÉSUMÉ

La spiramycine est un des agents chémotherapeutiques parfois utilisés en parodontie. On l'utilise avec le surfaçage radiculaire ou toute autre approche choisie selon le besoin. Le but de cet article est de faire une mise à jour de l'information dans la littérature sur l'utilisation de ce macrolide in vitro, in vivo, les effets de la spiramycine dans le contrôle de la plaque et la formulation d'hypothèses intéressantes sur le mode d'action de la spiramycine.

ABSTRACT

Chemotherapeutic agents appear to offer a great potential in the treatment of periodontal disease in conjunction with root planing and/or surgical approach. One of these chemotherapeutic agents is spiramycin. The aim of this paper is to review some data about the spiramycin in vitro, in vivo, the effects of spiramycin on plaque control and some interesting hypothesis on action of spiramycin.

Les maladies parodontales sont des infections d'origine bactérienne comportant deux ou plusieurs espèces. Elles sont causées par une accumulation de la plaque supra et sous-gingivale. Les parodontopathies d'origine inflammatoire sont causées par les bactéries à gram négatif dont celles du groupe des *Bacteroides* à pigmentation noire. Sans l'élimination de l'infection, la régénération et/ou la réparation des tissus est impossible. L'agent bactérien pourrait être éliminé par une antibiothérapie permettant ainsi au milieu de retrouver son pouvoir naturel de défense et de réduire l'inflammation des tissus gingivaux¹. Les antibiotiques peuvent aider le patient et le

dentiste en présence de différentes manifestations inflammatoires².

L'antibiotique idéal, pour le traitement des parodontopathies et le contrôle de la plaque, devrait avoir un spectre d'action étroit (spécifique aux espèces bactériennes impliquées dans les parodontopathies) pour ne pas perturber la flore normale, ne pas être utilisé de façon courante en médecine pour éviter de promouvoir la résistance bactérienne, être facile à administrer (oral), être conservé sous sa forme active dans les tissus de préférence oraux, être éliminé lentement et causer peu d'effets secondaires^{1,3,4,5}.

L'un des antibiotiques qui se rapproche le plus de cet idéal est la spiramycine^{1,5}. C'est un antibiotique du groupe des macrolides. La composition chimique et le spectre antibactérien des macrolides sont semblables. Tous possèdent un anneau "aglycone" sans azote, quelquefois des liens doubles et un ou plusieurs sucres reliés à l'anneau⁶. Les sucres peuvent être aminés ou non ou les deux. Des différences entre les macrolides existent au niveau de certaines propriétés physiques et chimiques. L'activité des macrolides est fournie par l'aglycone et le ou les sucres liés. Le sucre n'est pas actif par lui-même, mais permet la variation des propriétés et activités des différents macrolides. La spiramycine, membre des macrolides, est produite par *S. ambofaciens*⁶. Deux sucres sont reliés à l'anneau aglycone (voir figure 1) soit la forasamine (isomycamine) et le mycaminose-mycarose. La spiramycine possède un spectre d'action étroit. Elle est bactériostatique mais devient bactéricide à des concentrations 4 à 10 fois plus

élevées que la concentration minimale inhibitrice de la croissance pendant une période prolongée⁸. La spiramycine interfère avec la pénicilline, de même qu'avec le chloramphénicol. En effet, la spiramycine se fixe sur la sous-unité 50 S des ribosomes bactériens à un site très rapproché ou chevauchant celui du chloramphénicol empêchant ainsi son action. La spiramycine inhibe la traduction de RNA messenger^{8,9} dans la synthèse des protéines, en bloquant la formation de certains liens peptidiques. De plus, la spiramycine inhibe l'incorporation des acides aminés proline, lysine, phénylalanine dirigés par les poly C, poly A et poly U respectivement. Deux hypothèses pourraient expliquer le bris des polysomes par la spiramycine. La spiramycine causerait un détachement prématuré des ribosomes sur les polysomes inhibant l'étape d'initiation de la synthèse de polypeptides. L'autre hypothèse (plus plausible) est que la spiramycine bloquerait la liaison au niveau du site actif de la peptidyltransférase⁶. Les bactéries à gram positif telles que *Streptococcus* sp. et *Staphylococcus* sp. sont les plus sensibles à l'action bactériostatique de la spiramycine de même que *Neisseria* sp. (gram négatif). C'est un antibiotique peu utilisé en médecine, ne causant que très peu d'effets secondaires et qui, de plus, ne favorise pas la résistance bactérienne³. En effet, comme l'érythromycine (macrolide), la résistance bactérienne est réversible c'est-à-dire qu'en l'absence de spiramycine, les bactéries perdent leur résistance acquise en sa présence⁸. La spiramycine est excrétée dans les urines, la bile, de même que dans la salive². La spiramycine possède la propriété de se concentrer dans les tissus oraux (glandes salivaires, os alvéolaire, parotide)^{2,3,10,11,12,13,14,15,16} pour être excrétée non seulement dans la salive mais également dans le liquide crévulaire à une concentration 10 fois supé-

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rieure à celle retrouvée dans le sérum ou la salive^{15,17}.

Pellerat et Maillard (1963)¹⁰, en comparant la concentration retrouvée de certains antibiotiques dans la salive, ont observé que la spiramycine est l'antibiotique le plus excrété dans la salive. Deux études ont été effectuées chez les rats pour montrer la rétention de la spiramycine dans les tissus oraux. Tsvetanova et Klein-Genova (1967)¹¹ ont montré que la spiramycine était emmagasinée dans les os jusqu'à 22 jours après le traitement. Leung et coll. (1972)¹⁸ ont montré que la spiramycine était toujours présente 7 jours après le traitement dans l'os alvéolaire et les tissus gingivaux tandis que l'on pouvait en détecter jusqu'à 21 jours dans les glandes parotides et sous-mandibulaires. Leurs travaux permettent de confirmer l'utilité de la spiramycine dans le traitement des inflammations du parodonte.

Spiramycine *in vitro* (souche bactérienne pure)

L'action de la spiramycine *in vitro* a été étudiée par quatre groupes de chercheurs. Certaines espèces, notamment *A. actinomycetemcomitans*, *Peptostreptococcus* sp. et *Propionibacterium* sp., sont résistantes à la spiramycine^{19,20,21}. Les espèces du groupe des *Bacteroides* à colonie pigmentée noire, dont *B. gingivalis* et *B. intermedius*, impliquées dans les parodontopathies, sont sensibles à la spiramycine^{19,20,21,22}. Des contradictions sont par contre obtenues quant à l'action de la spiramycine sur les espèces de *Capnocytophaga* sp. En effet, d'après Mouton et coll. (1984)²⁰, les souches de *Capnocytophaga* sp. testées sont sensibles à la spiramycine (CMI < 0,06 à 0,5 µg/ml), il en est de même pour Baker et coll. (1985)²¹ où 6,3 µmole/ml de spiramycine sont nécessaires pour inhiber 90% des souches de *Capnocytophaga* sp. Par contre, d'après Mashimo et coll. (1981)¹⁹, la spiramycine utilisée à une concentration de 1 µg/ml inhibe aucune des trois souches testées.

Certains auteurs^{3,15,16,21} mentionnent que les bactéries à gram négatif ne sont pas affectées par la spiramycine même à des concentrations élevées. L'efficacité d'un antibiotique est non seulement dépendante de son activité *in vitro* mais également sur son habilité à se rendre au site d'action²². Il est certain que les bactéries à gram négatif sont théoriquement moins sensibles mais la capacité de la spiramycine à se concentrer dans les tissus et d'être présente pendant une longue période dans la cavité buccale après la fin

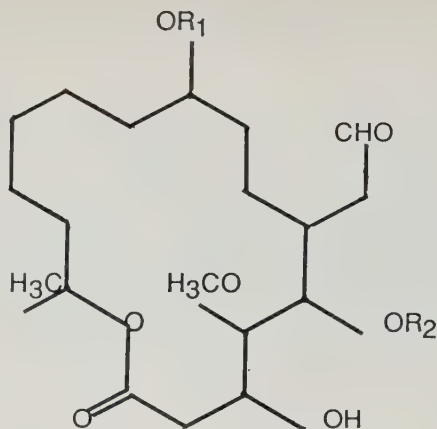


Figure 1: Structure de la spiramycine. Deux sucres sont liés à l'anneau aglycone (R₁ et R₂). DINYA et SZTARICKA, 1986⁷.

de son administration permet une action sur certaines bactéries à gram négatif comme celles du groupe des *Bacteroides* à colonie pigmentée noire qui sont tout de même sensibles *in vitro*.

Bousquet (1969)²⁴ (en résumé de la thèse de Woehrle, 1968) mentionne que la spiramycine est beaucoup plus active *in vivo* que *in vitro*. Il est donc peu probable que les bactéries du groupe des *Bacteroides* à colonie pigmentée noire soient retrouvées dans la plaque après un traitement à la spiramycine. Un grand nombre de bactéries du genre *Fusobacterium* et *A. actinomycetemcomitans* devraient par contre être retrouvées puisqu'elles sont résistantes *in vitro* à des concentrations très élevées de spiramycine.

Spiramycine *in vivo* dans le traitement des parodontopathies

La dose moyenne pour traiter un adulte souffrant d'une parodontite chronique était de 4 × 250 mg par jour pendant 5 jours¹⁵. Quelques études cliniques sur l'efficacité de la spiramycine ont été effectuées. Daligand et Pellerat (1956)²⁵ traitèrent à la spiramycine 7 patients réfractaires au traitement conventionnel et obtinrent des résultats satisfaisants pour la période de l'étude. Par la suite, Daligand (1958)²⁶ effectua une autre étude sur une période de trois ans au bout de laquelle il conclut que la majorité des patients souffrant de parodontite chronique et traités à la spiramycine pendant 20 jours étaient maintenus en bonne condition. Hess (1958)²⁷ et Couturier (1959)²⁸ observèrent l'utilité de la spiramycine dans le traitement des parodontites chroniques. Harvey (1961)²⁹ a étudié l'efficacité de la spiramycine chez des patients atteints d'une parodontite aiguë avec et sans traitement local. Il est venu à la conclusion que la spiramycine pouvait avoir une

action valable lorsqu'utilisée conjointement à une thérapie locale dans les cas de parodontite aiguë. De plus, il a été démontré que, même sans traitement local, la condition du parodonte était améliorée par l'administration de la spiramycine^{30,31}. Harvey et coll. (1981)³² sont venus à la conclusion que la spiramycine modifiait la présence des spirochètes dans l'inflammation des parodontites juvéniles avec ou sans traitement local. Par contre, de meilleurs résultats sont obtenus lorsque les deux sont exécutés. Dans le traitement de la gingivite ulcéro-nécrotique aiguë, la spiramycine est aussi efficace que la streptomycine, la chloromycine et l'achromycine. Une amélioration de la condition (symptômes subjectifs) est notée mais il n'y a aucune amélioration au niveau de l'indice de plaque et l'indice gingival³³.

Les antibiotiques du groupe des macrolides ont des spectres d'action plus ou moins rapprochés mais leur mode d'action est identique comme mentionné auparavant. Par contre, Mills et coll. (1976)³⁴, (1979)³⁵ ont montré que la spiramycine pourrait avoir un meilleur contrôle sur les maladies parodontales que l'érythromycine également du groupe des macrolides. Leur conclusion est basée sur l'étude de plusieurs paramètres: l'indice gingival, la hauteur de la plaque, la profondeur des poches parodontales, le liquide crévulaire et le poids humide de la plaque. Les patients traités à la spiramycine ont montré une meilleure réduction de ces paramètres que les patients du groupe contrôle (placebo) ou du groupe érythromycine. L'une des raisons pouvant expliquer la supériorité de la spiramycine sur l'érythromycine est probablement l'ingrédient actif de la spiramycine plus petit que celui de l'érythromycine. Sa grosseur lui permettrait d'être excrétée dans le liquide crévulaire augmentant ainsi son action bienfaitrice³⁴.

Effet de la spiramycine dans le contrôle de la plaque

Keyes et coll. (1966)³⁶ ont montré chez les hamsters que la spiramycine est l'agent le plus effectif dans le contrôle de la plaque, de la carie et les maladies parodontales. Par contre, d'après Johnson et coll. (1978)¹⁶, la spiramycine n'est pas efficace dans le contrôle de la plaque. Ils ont mesuré les indices gingival et de plaque chez des volontaires ayant reçu de la spiramycine ou un placebo. Ils ont observé aucune différence statistiquement valable entre les deux groupes si ce n'est que pour la plaque à la troisième semaine au niveau mandibulaire. Plus

tard, Rozanis et coll. (1979)³⁷ ont soutenu, d'après leurs résultats, que la spiramycine montrait suffisamment de potentiel dans le contrôle de la plaque pour justifier de nouvelles études. Ils ont remarqué une diminution statistiquement significative de la plaque supra-gingivale dans le groupe expérimental pour une période de trois semaines. Dans cette même étude, ils ont montré une réduction significative du nombre de *S. mutans* et *S. sanguis*. Par contre, en général, les microorganismes à gram négatif ne semblaient pas affectés par la spiramycine. Comme les bactéries résistantes non pas été identifiées, on ne peut en tenir compte car certaines bactéries à gram négatif impliquées dans les parodontopathies sont aussi sensibles que les bactéries à gram positif. On pourrait s'attendre à ce que les espèces de *Fusobacterium* et *A. actinomycetemcomitans* soient présentes en grand nombre car elles sont très résistantes *in vitro*, par contre les espèces de *Bacteroides* devraient être absentes.

Hypothèses sur le mode d'action de la spiramycine

La spiramycine agirait lors de la recolonisation des poches parodontales (après le surfaçage radiculaire) par les bactéries à gram positif. Ces bactéries ne pourraient s'organiser, assurant ainsi un meilleur environnement à la guérison du patient. Une autre hypothèse serait qu'en diminuant la population des bactéries à gram positif, on élimine par le fait même une source de nutrition possible pour les bactéries à gram négatif et donc une recolonisation moins rapide³⁸.

La spiramycine montre un potentiel dans le traitement des parodontopathies mais d'autres études seront nécessaires avant qu'elle soit acceptée dans un traitement routinier des parodontopathies⁵. Δ

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TAXATION SEMINAR

JUNE 2, 1989

8:30 a.m. – 4:30 p.m.

WESTIN HOTEL • WINNIPEG

Dr. Robert N. Hicks of West Vancouver, Chairman of the CDA Taxation Committee, will chair a CDA Taxation Seminar in Winnipeg, Manitoba on Friday, June 2, 1989.

Presenters will include tax lawyers and accountants knowledgeable in the area of tax information as it applies to the dentist's financial activity in both practice and personal environments.

- | | |
|---|--|
| ☐ Income Tax Reform | ☐ Tax Implications in Estate Planning |
| ☐ Sales Tax Reform | ☐ Update on the Use of Corporations |
| ☐ Tax Implications in Financial Planning | (Professional Management Companies, |
| ☐ Tax Shelter Investing | Personal Service Corporations, Incorporated |
| ☐ Income Splitting | Practices) |
| | ☐ 1989 Budget |

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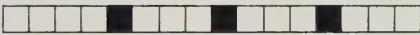
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Fees:

CDA Member: \$130.00

Spouse or personnel accompanying a member: \$100.00

Non-member and Others: \$190.00

(Includes Luncheon and Refreshment Breaks)

Accommodation:

Please call Westin Hotel directly, using the CDA name for prearranged preferential rates.

(204) 957-1350

\$95.00 single/double

Cancellation Policy – Registration:

Cancellation before May 1 – full refund.

Cancellation after May 1 – 75% refund.

Cancellation after May 19 – no refund.

Registration by telephone will be accepted when utilizing Visa/MasterCard
Toll free numbers: 1-800-267-6364 Eastern Canada except area code 709
1-800-267-6354 Western Canada and area code 709

**Canadian Dental Association Convention
Vancouver 1989**

Table Clinics

Table Clinics are defined as a brief table top presentation or demonstration of five to ten minutes duration using visual aids, and repeated over a 2 1/2 hour period.

Those interested in presenting, write to:



Dr. Bob Clarke
Scientific Program
CDA Convention
1815 Alta Vista Drive
Ottawa, Ontario
K1G 3Y6



Canadian Dental Association Convention

Vaccination Clinic

**Engerix[®]-B
Hepatitis B Vaccine
(recombinant)**

With the cooperation of Smith Kline and French, a vaccination clinic against Hepatitis B virus will be offered to dentists, hygienists, assistants and technicians at a special rate for CDA convention participants.

This 3-dose program includes the injection of a first dose on site and the mailing of the 2nd and 3rd doses after the convention.

If you already have been vaccinated, the National Advisory Committee on Immunization feels that a booster dose after 5 years may be prudent.

ON SITE REGISTRATION ONLY.

Announcements

June/Juin 1989

June 1-3: 2nd International Symposium on Osseointegrated Dental Implants in Philadelphia, PA. For registration information, contact: University of Pennsylvania, Continuing Dental Education, 4001 Spruce St, Philadelphia, PA 19104 USA.

June 1-4: Annual Meeting of the Canadian Association of Dental Consultants in Toronto, Ontario. Contact: Dr. Ronald G. Weiler, 535 Park St, Suite 3, Kitchener, Ont N2G 1N8.

June 1-5: 12th Congress International Association of Dentistry for Children in Athens, Greece. For details, contact: Secretariat, 12th Congress IADC, 41, Skoufa Str, Athens 106 73, Greece.

June 4-9: V International Conference on AIDS in Montréal, Québec. For more information, write to: V International Conference on AIDS, Secretariat, Kenness Canada Inc, 1010, rue Ste-Catherine ouest, bureau 628, Montréal (Québec) H3B 1G7.

June 5-9: XXV Congreso nacional y V International de Odontología y Estomatología in Malaga, Spain. For information, contact: SITECC-SIASA, c/o Manuel del Palacio, 16, Edif. Costa Bella, Apto. 3, 29017 MALAGA, Spain. Tel: 29 29 20 - 29 41 43.

June 5-9: Osseointegration in Clinical Dentistry: Clinical and Technician Training Courses in Malmo, Sweden. Contact: Lund University, Postgraduate Centre of Dentistry, Carl Gustafs vag 34, S-21421 Malmo, Sweden.

June 7-14: American Dental Hygienists' Association in Boston. Contact: Ms. Kathy Gallagher, 444 N Michigan Ave, Suite 3400, Chicago, ILL 60611, USA.

June 8-11: Alberta Dental Association Convention in Red Deer, Alberta at the Capri Centre. Theme "Unity in Dentistry". Registration: Dr. Barry Fleming, Highland Green Shopping Centre, 6315 Horn St, Red Deer T4N 6H5 Tel: (403) 346-8443.

June 10-16: ACFD/CADR Biennial Conference on Dental Education & Research in London, Ontario. For further information, contact: Mrs. Stella Taylor, Executive Assistant, ACFD, #109 - 1815 Alta Vista Dr, Ottawa, Ont K1G 3Y6. (613) 738-7732.

June 19-23: 14th International Congress of Gerontology in Acapulco, Mexico. For details, contact: Congress Secretariat, Joutla No. 91, Tlalpan CP 14090, Mexico D.F., Mexico.

June 26-30: XII Congreso de la Federación odontológica latinoamericana y XI Congreso nacional de Estomatología in Havana, Cuba. Contact: International Conference Center, Apartado 16046, Zona 16, Havana, Cuba. Tel: 20-4653.

June 27-30: 95th Annual Meeting of the American Dental Society of Europe in Deauville, France. Details: Dr. Clive R. Debenham, 1 Harley St, London W1N 1DA, England. 01.580 2294.

June 28-30: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Wilma E. Motley, 18952 Blackhawk St, Northridge, CA 91326, USA.

June 28-July 1: 11th International Symposium on Dental Hygiene in Ottawa. For more information, contact: Mrs. D. Scanlon, 53 Ariel Crt, Nepean, Ont K2H 3J1. (613) 728-8730.

June 28-July 1: International Association of Dental Research & International Conference on Oral Biology in Dublin, Ireland. For information, contact: Ms. Eloise Bredder, Administrative Assistant, American Association of Dental Research, 1111 - 14th St NW, Suite 100, Washington, DC 20005 USA.

June 28-July 5: Bermuda Dental Association Convention. Limited attendance convention. Contact: Dr. Bob Brandon, 85 Lonsdale Dr, London, Ont N6G 1T4. (519) 657-3368.

June 30-July 2: Dentistry 89 in Oxford, England. For details, contact: Linda Bridges, Conference Office, British Dental Association, 64 Wimpole St, London W1M 8AL. Tel: 01-935 0875.

June 30-July 2: Florida National Dental Congress in Orlando, Florida. For information: Florida National Dental Congress, 3021 Swann Ave, Tampa, FL 33609, USA.

June 30: Deadline for applications for World Health Organization Fellowships. Limited number available for Canadian citizens for short-term health studies out-

side Canada. For further information, contact: WHO Fellowships, Intergovernmental and International Affairs Branch, Health and Welfare Canada, Ottawa, Ontario K1A 0K9. (613) 957-7287.

July/juillet 1989

July 14-19: Academy of General Dentistry in New York. Contact: Ms. Debbie Jepsen, 211 E Chicago Ave, Suite 1200 Chicago, ILL 60611, USA.

August/Août 1989

August 5-10: The World Congress on Health in The Great Hall of the People, Beijing, People's Republic of China. For more information, contact: The World Congress on Health, Dwight D. Eisenhower Bldg, Spokane, WA 99202, USA. (509) 534-0430.

August 9-13: Dental Manufacturers of America, Inc. Contact: Ms Kathleen A. LeMar, 1118 Land Title Bldg, Philadelphia, PA 19110, USA.

August 10-13: American Academy of Esthetic Dentistry in Pebble Beach, CA. Contact: Ms. Cheryl Kraus, 211 Chicago Ave, Suite 948, Chicago, ILL 60611, USA.

August 18-20: 5th Annual Symposium, ACOI: Implant Surgery and Prosthodontics in Oakland, California. Information: Margaret M. Jackson, International Congress of Oral Implantologists, PO Box 2277, Grand Central Station, New York, NY 10163, USA. (201) 783-6300.

August 20-24: Ethics, Justice and Commerce in Transplantation: A Global View in Ottawa, Ontario. For more information, please write: Ethics, Justice and Commerce in Transplantation, 2nd fl, 185 Rideau St, Ottawa, Ont K1N 5X8.

August 21-25: 18th North Queensland Dental Convention in Cairns, Australia. For details, contact: Dr. Peter Martin, Director, 18th North Queensland Dental Convention, PO Box 388, Cairns 4870, Australia.

August 26-30: 25th Class Reunion University of Manitoba Class of '64 in Vancouver during CDA Convention. Contact: Dr. Ken Neuman (604) 736-7371.

August 27-30: Canadian Dental Association Convention in Vancouver, British Columbia. For more information, contact: Miss Leila Chatterjee, Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6 Tel: (613) 523-1770.

August 28-30: International Conference on Bloodborne Infections in the Workplace in Stockholm, Sweden. Sponsored by WHO, ILO and NIH (USA). Abstracts invited - deadline March 31. Contact: CONGREX AB, PO Box 5619, S-114 86 Stockholm, Sweden, ATTN: Catharina Oström.

September/Septembre 1989

September: New Zealand Dental Association Convention in Napier, New Zealand. Contact: Dr. DG Arnott, 30 Munro St, Napier, New Zealand.

September: 27th Annual Convention of Iranian Dental Association and 7th International Dental Exhibition in Tehran. Contact: Dr. Ezatollah Khamessi, Iranian Dental Association International Section, PO Box 14155-3695, IR-Tehran 14, Iran.

September 2-8: 77th Annual World Dental Congress, FDI, in Amsterdam, The Netherlands. Congress Secretariat, c/o Organisatie Bureau Amsterdam bv, Europaplein 12, 1078 GZ Amsterdam, The Netherlands. (31) 20-5491212.

September 21-23: 41st Annual New Orleans Dental Conference What's Cookin' in '89. For more information, call or write: Ms. Norma Ward, New Orleans Dental Conference, Suite 119, 3101 W. Napoleon Ave, Metairie, LA 70001, USA. (504) 834-6449.

September 21-23: 28th Annual Meeting and Scientific Session of the Canadian Academy of Prosthodontics in Montreal. Contact: Dr. Alan R. Mills, Faculty of Dentistry, The University of Western Ontario, London, Ont N6A 5C1.

September 22-24: 25th Annual Session of the Canadian Academy of Endodontics in Montreal. For more information contact: Wayne Acheson, Suite 301, 400 St Mary Ave, Winnipeg, Manitoba R3C 4K5.

October/Octobre 1989

October 5-8: IX National Dental Congress of Asocacion Odontologica Dominicana in Santo Domingo. Contact: IX Congreso Nacional de Odontologica, Apartado Postal 1002, Santo Domingo, Dominican Republic.

October 5-8: Annual Meeting of the International Association for Orthodontics and the American Orthodontic Society in Montreal. For details, contact: IAO Headquarters, 211 E Chicago Ave, Suite 915, Chicago, IL 60611. (312) 642-2602.

October 11-15: American Academy of Implant Dentistry in Scottsdale. Contact: Mr. John P. Winiewicz, PO Box 2002, Abington, MA 02351, USA.

October 24-27: American College of Prosthodontists in Tuscon. Contact: Ms. Linda Wallenborn, 1777 NE Loop 410, Suite 904, San Antonio, TX 78217, USA.

October 24-27: 3rd International Medical, Hospital and Dental Equipment and Facilities Exhibition in Bangkok, Thailand. Contact: Elsa Wong, SHK International Services Ltd, 22/f National Mutual Centre, 151 Gloucester Rd, Hong Kong, 89587 SHKIS HX.

October 25-28: American Academy of Periodontology in Washington, DC. Contact: Ms. Jean Pierson, 211 Chicago Ave, Suite 1400, Chicago, ILL 60611, USA.

October 27-28: International Congress for Oral Implantologists in New York. Contact: Ms. Margaret Jackson, 248 Lorraine Ave, 3rd floor, Upper Montclair, NJ 07043, USA.

October 27-31: American Institute of Oral Biology in Palm Springs. Contact: Dr. Philip Boyne, Dept of Surgery, School of Dentistry, Room 3306, 24777 University St, Loma Linda, CA 92350, USA.

October 30-November 1: American Academy of Maxillofacial Prosthetics in Tuscon. Contact: Dr. Gregory Parr, MCG/School of Dentistry, Dept of Prosthodontics, August, GA 30912, USA.

October 30-November 3: American Dental Trade Association in Maui, Hawaii. Contact: Mr. Nikolaj Petrovic, ADAT, 4222 King St, Alexandria, VA 22302, USA.

October 30-November 3: 107th Annual Meeting of the American Dental Trade Association in Maui, Hawaii. Contact: Nikolaj M. Petrovic, CAE President & Chief Executive Officer, American Dental Trade Association, 4222 King St, Alexandria, VA 22303 USA.

October 30-November 5: International College of Dentists in Honolulu, Hawaii. Contact: Dr. Richard Schaffer, One Metro, 51 Munroe St, Suite 1501, Rockville, MD 20850, USA.

November/Novembre 1989

November 1-3: 52nd Annual Meeting of the American Association of Public Health Dentistry in Honolulu, Hawaii. Contact: AAPHD, National Office, 10619 Jousting Lane, Richmond, VA 23235, USA.

November 3: American Association of Dental Consultants in Honolulu, Hawaii. Contact: Dr. Alan Helerstein, 919 Deer Park Ave, North Babylon, NY 11703, USA.

November 3: American Endodontic Society in Honolulu, Hawaii. Contact: Dr. Alvin H. Arzin, 2 Learning Lane, Levittown, PA 19054, USA.

November 4-7: 130th Annual Session of the American Dental Association in Honolulu, Hawaii. Contact: Office of International Affairs, American Dental Association, 211 E Chicago Ave, Chicago 60611 USA.

November 5-8: American Academy of Dental Radiology Contact: Capt. Tom McDavid, OASD Health Affairs, Pentagon Room 3D372, Washington, DC 20301-1200, USA.

November 8-12: American Society of Dentistry for Children in San Diego, CA. Contact: Ms. Carol A. Teuscher, 211 E Chicago Ave, Suite 1430, Chicago, Ill 60611, USA.

November 15-18: VI Congreso Internacional de Estomatología y X Congreso Nacional de Odontología in Lima, Peru. Contact: Dr. Ramon Castillo, President de los Congresos, Alfredo Salazar 583, Of. 102, San Isidro, Lima, Peru.

POLOCAINE® 3%
Mepivacaine Hydrochloride Injection USP
30 mg/mL

THERAPEUTIC CLASSIFICATION
Local Anesthetic for Infiltration and Nerve Block

ACTION
Mechanism of action: POLOCAINE (mepivacaine hydrochloride) stabilizes the neuronal membrane and prevents the initiation and transmission of nerve impulses, thereby effecting local anesthesia

Onset of action: The onset of action is rapid (30 to 120 seconds in the upper jaw; 1 to 4 minutes in the lower jaw) and POLOCAINE 3% without vasoconstrictor will ordinarily provide operating anesthesia of 20 minutes in the upper jaw and 40 minutes in the lower jaw.

Mepivacaine does not ordinarily produce irritation or tissue damage.

Pharmacokinetics and metabolism: Mepivacaine is rapidly metabolized with only a small percentage of the anesthetic (5 to 10 percent) being excreted unchanged in the urine. Mepivacaine, because of its amide structure, is not detoxified by the circulating plasma esterases. The liver is the principal site of metabolism, with over 50 percent of the administered dose being excreted into the bile as metabolites. Most of the metabolized mepivacaine is probably resorbed in the intestine and then excreted into the urine since only a small percentage is found in the faeces. The principal route of excretion is via the kidney. Most of the anesthetic and its metabolites are eliminated within 30 hours. It has been shown that hydroxylation and N-demethylation, which are detoxification reactions, play important roles in the metabolism of the anesthetic. Three metabolites of mepivacaine have been identified from adult humans; two phenols, which are excreted almost exclusively as their glucuronide conjugates, and the N-demethylated compound 2', 6'-pipecoloxylidide.

INDICATIONS
POLOCAINE 3% (mepivacaine hydrochloride) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS
POLOCAINE 3% (mepivacaine hydrochloride) is contraindicated in patients with a known hypersensitivity to amide type local anesthetics.

WARNINGS
DENTAL PRACTITIONERS WHO EMPLOY LOCAL ANESTHETIC AGENTS SHOULD BE WELL VERSED IN DIAGNOSIS AND MANAGEMENT OF EMERGENCIES WHICH MAY ARISE FROM THEIR USE. RESUSCITATIVE EQUIPMENT, OXYGEN AND OTHER RESUSCITATIVE DRUGS SHOULD BE AVAILABLE FOR IMMEDIATE USE.

Reactions resulting in fatality have occurred on rare occasions with the use of local anesthetics, even in the absence of a history of hypersensitivity.

Local anesthetic procedures should be used with caution when there is inflammation and/or sepsis in the region of the proposed injection.

Usage in Children: Great care must be exercised in adhering to safe concentrations and dosages for pedodontic administration. (See DOSAGE AND ADMINISTRATION).

PRECAUTIONS
The safety and effectiveness of local anesthetics depend upon proper dosage, correct technique, adequate precautions and readiness for emergencies.

INJECTIONS SHOULD ALWAYS BE MADE SLOWLY WITH ASPIRATION TO AVOID INTRAVASCULAR INJECTION AND, THEREFORE, SYSTEMIC REACTION TO THE LOCAL ANESTHETIC.

Changes such as excitation, disorientation, drowsiness, may be early indications of a high blood level of the drug and may occur following inadvertent intravascular administration or rapid absorption of mepivacaine.

The lowest dosage that results in effective anesthesia should be used to avoid high plasma levels and possible adverse effects. Injection of repeated doses of mepivacaine may cause significant increase in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slower metabolic degradation than normal.

Tolerance varies with the status of the patient. Debilitated or elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their weight and physical status. Mepivacaine should be used with caution in patients with a history of severe disturbances of cardiac rhythm or heart block.

POLOCAINE 3% (mepivacaine hydrochloride) should be used with caution in patients with known drug allergies and sensitivities. A thorough history of the patient's prior experience with mepivacaine or other local anesthetics as well as concomitant or recent drug use should be taken (see CONTRAINDICATIONS). Patients allergic to methylparaben or para-aminobenzoic acid derivatives (procaine, tetracaine, benzocaine, etc.) have not shown cross-sensitivity to agents of the amide type such as mepivacaine.

Since mepivacaine is metabolized in the liver and excreted by the kidneys, it should be used cautiously in patients with liver and renal disease.

Many drugs used during the conduct of anesthesia are considered potential triggering agents for familial malignant hyperthermia. It has been shown that the use of amide local anesthetics in malignant hyperthermia patients is safe. However, there is no guarantee that neural blockade will prevent the development of malignant hyperthermia during surgery. It is also difficult to predict the need for supplemental general anesthesia. Therefore a standard protocol for the management of the malignant hyperthermia should be available.

Drug Interaction: If sedatives are employed to reduce patient apprehension, use reduced doses, since local anesthetic agents, like sedatives, are central nervous system depressants which, if given in combination may have an additive effect. Young children should be given minimal doses of each agent.

Usage in Pregnancy: Safe use of mepivacaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

ADVERSE REACTIONS
Systemic adverse reactions involving the central nervous system and the cardiovascular system usually result from high plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection.

More common reactions
Central Nervous System: Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may occur followed by drowsiness.

Gastrointestinal: Nausea and vomiting

Less common reactions
Central Nervous System: More serious but less common reactions that reflect an overdosage of anesthetic are: convulsions, unconsciousness, and possibly respiratory arrest. Since excitement may be transient or absent, the first manifestations of adverse reactions may be drowsiness merging into unconsciousness and respiratory arrest.

Cardiovascular: Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, and even cardiac arrest.

Allergic: Allergic reactions are rare and may occur as a result of sensitivity to the local anesthetic. reactions may be characterized by cutaneous lesions of delayed onset or urticaria, edema and manifestations of allergy. The reaction may be abrupt and severe and is usually not dose related. detection of sensitivity by skin testing is of limited value. As with other local anesthetics, anaphylactic reactions to mepivacaine have rarely occurred.

Neurologic: The incidence of adverse neurological reactions directly caused by the use of local anesthetics is very low. Neurological reactions may be related to the total dose of the local anesthetic administered and are also dependent upon the particular drug used, the route of administration and the physical status of patient. Many of these effects may be related to local anesthetic techniques, with or without contribution from the drug.

OVERDOSAGE
Systemic toxicity to amide type local anesthetics is initially manifested as CNS excitation and may be followed by a slow onset of nervousness, dizziness, blurred vision and tremors followed by drowsiness, convulsions, unconsciousness and possibly respiratory arrest.

Toxic cardiovascular reactions to local anesthetics, which are usually depressant in nature, may occur rapidly and with little warning and can lead to peripheral vasodilation, hypotension, myocardial depression, bradycardia and possibly cardiac arrest.

Treatment of Systemic Reactions: Treatment of toxic manifestations consists of assuring and maintaining a patent airway and supporting ventilation (respiration) as required. This usually will be sufficient for the management of most reactions.

Should a convulsion persist despite ventilatory therapy, small increments of anticonvulsive agents should be given intravenously, such as benzodiazepine (e.g., diazepam) or ultra-short acting barbiturates (thiopental or thiameylal) or short-acting barbiturates (e.g., pentobarbital or secobarbital).

Cardiovascular depression may require circulatory assistance with intravenous fluids and/or vasopressors (e.g., ephedrine) as dictated by the clinical situation.

Allergic reactions should be managed by conventional means.

DOSAGE AND ADMINISTRATION
As with all local anesthetics, the dose varies and depends upon the area to be anesthetized, the vascular supply of the tissues, individual tolerance and the technique of anesthesia. THE LOWEST DOSE NEEDED TO PROVIDE EFFECTIVE ANESTHESIA SHOULD BE ADMINISTERED. For specific techniques and procedures refer to standard dental manuals and textbooks.

Adults
RECOMMENDED DOSAGES FOR POLOCAINE 3% (30 mg/mL) IN THE AVERAGE, HEALTHY ADULT

	Infiltration	Block
Suggested dosage	1-2 mL	1.5 – 5 mL
Onset of action (approx)	2.5 min	4 min
Duration of action		
Pulp	15 min	90 min
Soft tissue	1-1.5 h	2.5 h

Each cartridge contains 1.8 mL of 3% solution or 54 mg of mepivacaine.

MAXIMUM DOSAGE:
Adults: It is recommended that the dose of POLOCAINE at any one time should not exceed 5-7 mg/kg body weight or 400 mg mepivacaine hydrochloride, 7 cartridges. However, the dose administered should be tailored to the individual patient and procedure, and the maximum dose here quoted should be used as a guide only.

Children: For children, the dose may have to be reduced commensurate with body weight. The maximum pediatric dose should be carefully calculated and should not exceed 5 cartridges (2 cartridges of the 3% solution). The maximum pediatric dose should be calculated as:

Maximum Dose for Children =
$$\frac{\text{Child's Weight (kg)}}{70} \times \text{Maximum Recommended Dose for Adults (400 mg)}$$

When using POLOCAINE 3% for infiltration or regional block anesthesia, injection should always be made slowly and with frequent aspiration.

Any unused portion of a cartridge should be discarded.

Non medicinal ingredients:
Sodium chloride
Sodium hydroxide and/or hydrochloric acid to adjust pH 4.5-6.8
Water for Injection

AVAILABILITY
POLOCAINE 3% (mepivacaine hydrochloride) is available in plastic dental cartridges of 1.8 mL, packaged in boxes of 50 per box.

Offices and Practices

NORTHWEST TERRITORIES—Yellowknife: General dental practice established ten years for sale. Refurbished '85. P.O. Box 2615, Yellowknife, NWT X1A 2P9, (403) 873-8505 (W) or 920-2577 (H).

BRITISH COLUMBIA: 12-year-old, well-established general practice for sale. Located on outskirts of Vancouver Chinatown. Corner of ground floor. High visibility. 700 sq. ft. Two operatories. Phone (604) 270-1160, office hours.

BRITISH COLUMBIA: Satellite orthodontic practice for sale in suburb of Vancouver. Four chair operatory with approximately 120 patients in treatment and an active recall system. Very reasonable terms. Please reply to CDA Box 2450.

BRITISH COLUMBIA—Fraser Valley: Dynamic, established family practice for sale in Clearbrook, the sixth fastest growing community in Canada. One hour from Vancouver. 38 new patients per month, 1341 sq ft, 3 chairs, 4th op plumbed, congenial staff of six, computerized billing and accounts receivable system. Owner will assist with smooth transition. Contact Dr. M. Corlett: days (604) 854-3130 or evenings (604) 856-9671.

BRITISH COLUMBIA—Parksville (Vancouver Island): Established 12-year-old general practice has me working more hours than I wish, for more income than I require — Time to retire and enjoy this wonderful area more fully. Make my day — and yours. For details (604) 468-7736 evenings.

BRITISH COLUMBIA—Vancouver: RETAIL DENTAL PRACTICE IN NEW 900,000 sq ft SUPERMALL — Beyond busy — good annual gross. Call (604) 224-9100 evenings. Won't last. \$10,000 (refundable) certified deposit required to view.

BRITISH COLUMBIA—Vancouver: Practice for Sale: 736 Granville St, Suite 701 (V6Z 1G3). Four full opera-

tories — same location for 25 years. Phone (604) 681-7631 office or 733-9380 home.

BRITISH COLUMBIA—Vancouver: Modern practice with excellent potential for right operator. Easily accessible new building. Fairview slopes area. Owner has other interests. Phone (604) 531-7779 days (604) 536-9217 evenings.

BRITISH COLUMBIA—Victoria: Purchase or partnership for well-established, high-quality general practice with good recall program. Modern, well-equipped three operatories. Located in professional building adjacent two major shopping centres. Good growth potential. Dr. John Q. Fraser, 3909 Sandell Place, Victoria, BC V8N 5R4, (604) 721-0091 (evenings).

ALBERTA: Quality rural practice for sale in the beautiful heart of lakeland, North-eastern Alberta. Long established, owner wishes to retire and enjoy. Three operatories, two fully-equipped, third (prosthetic) room partially equipped. Hospital privileges. Dental equipment (mine) in hospital O.R. Private office & staff room. All rooms have generous space. Shared administration with other dentist. Cost \$45,000. \$15,000 down, owner will carry balance at prime + 1 per cent. Business (403) 645-4495. Home (403) 645-2584. Dr. L.G. Mandin, P.O. Box 9, St Paul, ALTA T0A 3A0.

ALBERTA: Practice for sale. Priced too reasonably. Out earns most other practices advertised. Professionally appraised. Practice is expanding. Nice office, very modern, must be seen. I only work 28 hours per week. Practice needs more. I am returning to school. Call (403) 553-4782 after 6 p.m.

ALBERTA—Brooks: Practice available immediately. Dentist retired but owns building. Four operatories. Some older equipment. Terms negotiable. Contact: Dr. C.T. McCune, PO Box 250, Brooks, ALTA T0S 0J0, phone (403) 362-2657.

ALBERTA—Calgary: Established dental practice for sale in modern, downtown professional building. Two well-equipped operatories utilized by 2 practitioners with high income and low overhead.

Combined endodontic practice with a good referral base. Both practitioners are retiring and leaving the city, however will ensure a smooth transition. Respond to CDA Box 2436.

ALBERTA—Calgary: Dental office for sale. Equipment, leasehold improvements. Convenient location, ample free parking. Close to fast transit. Modern offices, 4 operatories. Reasonable. Call Carra (403) 289-2516.

ALBERTA—Lethbridge: For Sale: Lucrative, well-established general practice. Modern, well-equipped operatories. Excellent opportunity for two new graduates. Owner will assist with transition. Reply in confidence to CDA Box 2447.

ALBERTA—Rocky Mountain House: For sale. Long-established, active, solo family practice. Main street, ground floor location. Three operatories, one newly-equipped. Located in growing, progressive community within easy access to both major cities. Outstanding recreational opportunities in the area. Professional appraisal available. Owner retiring. Contact (403) 845-3133 office or (403) 845-3455 home.

ALBERTA—St. Paul: Well-established 27-year-old practice for sale. Exceptional opportunity with three operatories — 90 per cent insurance. Priced to sell. Reason for selling — health problems. Very good location in excellent trading area. For details, contact: (403) 657-3456 or 657-3409.

SASKATCHEWAN: Very busy, family-oriented practice for sale in small Saskatchewan city. Four fully-equipped operatories, including panelipse. Large patient base makes it suitable for 2 new graduates or 1 experienced dentist. Very reasonable selling price. Reply to CDA Box 2420.

SASKATCHEWAN: Why work extended hours? 5000 patients waiting for you here. Owner leaving country July 1, 1989. Must sell family practice. Well-equipped, modern office; 2300 sq ft packed with dental equipment, private office, staff room. 100 per cent financing. Walk in and go to work now! Call today (306) 463-2600.

SASKATCHEWAN: For sale or lease established rural practice. Four chairs, 1600 sq ft, 50 miles south of Saskatoon. 2000 adults, 500 children's dental plan. Experienced CDA and dental therapist on staff. Attractive town of 2000 in mixed farming area. Housing available. Excellent schools and recreation. Phone (306) 867-8226 Outlook, Sask or 856-2014 evenings.

SASKATCHEWAN—Davidson: Fully-equipped, 3 chair dental practice in attractive new building. All supplies, etc. in place. Trained staff in area. For immediate sale. Dentist entering post-grad studies. Phone now for details (306) 693-0755. Fantastic opportunity.

SASKATCHEWAN—Saskatoon: New Endo practice. Spacious, bright office. Only full-time endo practice in a province of 1 million. Good referral base. Dental college in city. Reasonable price. (306) 244-6121.

MANITOBA: Busy general family practice. Good opportunity for experienced dentist or two new graduates. Easy commuting from Winnipeg. High gross, low overhead. Excellent staff with many years experience. Three well-equipped operatories. Practice established for 15 years in ideal location for area. Phone (204) 452-9986 or 261-4206.

NORTHERN ONTARIO: Busy general family practice with excellent lease in new medical centre. Well-established office with 2 operatories with panellipse, nitrous oxide. Underserviced grant available. Please reply to CDA Box 2388.

ONTARIO: PERIODONTIST OR ENDO-DONTIST WANTED. To share existing office with Oral Surgeon in Georgetown. Call Dr. J. Levitz (416) 279-9971.

ONTARIO—Ottawa: Dental office space available in downtown location. Landlord will provide generous leasehold improvement package. Call (613) 234-4386 daytime.

ONTARIO—Ottawa: Periodontist wanted for cost sharing arrangement with other specialist in modern, fully-equipped office. Excellent location. Please reply to CDA Box 2441.

QUÉBEC—St. Lambert: FOR RENT. Specialist. Fully-equipped operator, private office, use of receptionist, waiting room, lab, Vantage 8 telephone system with intercom, dark room in a new, beautiful

dental office in an excellent location. May be used as a permanent office or satellite. Anyone seriously interested call (514) 671-1217 or (514) 247-3193 (residence).

NOVA SCOTIA—Bridgewater: Exceptional opportunity. Very busy modern family practice available in beautiful town only one hour from Halifax. Well-established, excellent income. Strong economy provides the conveniences of city life without the hectic pace and problems. Close to many lakes, rivers, ocean beaches. Contact: 6452 Vienna St., Halifax, NS B3L 1S8 or phone (902) 454-9027 or 454-3748.

NOVA SCOTIA—Dartmouth: High-quality general practice for sale. Retiring for health reasons. For details contact Executive Director of Nova Scotia Dental Association, Suite 604, 5991 Spring Garden Rd, Halifax, N.S. B3H 1Y6 (902) 420-0088.

NOVA SCOTIA—Lunenburg: Practice for sale in modern medical-dental centre. Includes two fully-equipped operatories and cost-shared facilities such as spacious reception, hygiene, lab, panoramic x-ray facilities. Ideally located next to hospital and close to schools, shopping area and recreation facilities including swimming, golfing, boating, tennis, etc. Just one hour from Halifax. Please reply to: Robert Murray, DDS, P.O. Box 370, Lunenburg, N.S. B0J 2C0 or phone (902) 634-8880 (O) or 624-9966 (H).

NOVA SCOTIA—Sackville: Two year old practice in mall priced for immediate sale. Located in growing suburban area. May stay on as associate for transition. Phone (902) 466-5484 (home).

Associateships Available

YUKON—Whitehorse: Full-time associate required to assume well-established, quality general practice. Current associate will be taking indefinite maternity leave in Spring 1989. Good opportunity for young, conscientious dentist interested in high-quality, total patient care. Practice in a friendly, relaxed atmosphere close to the finest wilderness area in Canada. Future partnership opportunities available for the right individual. Phone:

Chuck Hazen (403) 668-6707 collect or write: 5110 - 5th Ave, Whitehorse, Yukon Y1A 1L4

YUKON—Whitehorse: Associate required for a very busy multidiscipline dental practice. Excellent opportunity for a young progressive dentist. Contact Dr. R. Pearson (403) 668-3152.

NORTHWEST TERRITORIES: Excellent opportunity for associateship in Yellowknife in a modern, state-of-the-art dental clinic. Excellent support staff and good recreational facilities. Emphasis on good quality dentistry and we require a dedicated, efficient dentist concerned with patient care and management. Excellent remuneration and arctic travel available. Please reply to CDA Box 2367.

NORTHWEST TERRITORIES: Well-established modern clinic in Yellowknife is seeking a capable, ambitious, quality-minded associate. Experienced dentists preferred, new graduates considered. Opportunities for travel into communities within the Arctic also available. Reply to CDA Box 2449.

BRITISH COLUMBIA—Thompson-Okanagan Region: ASSOCIATE REQUIRED. Exceptional opportunity for full- or part-time associate in busy, quality practice established 10 years. Contact: Dr. Barry R. Goldberg or Rita Barten, Box 188, Lillooet, BC V0K 1V0 or phone: (604) 256-4616 8 am to 5:30 pm or (604) 256-7162 after 5:30 pm.

BRITISH COLUMBIA—Vancouver: PEDIATRIC ASSOCIATE required for busy quality practice. Opportunity for partnership possible. Please reply in confidence to CDA Box 2444.

BRITISH COLUMBIA—Vancouver: Full-time associate required for dental office in downtown Vancouver. Please call (Tuesday to Saturday) Dr. Ng or leave message with receptionist at (B) (604) 873-8117. Experience preferred.

BRITISH COLUMBIA—Victoria: Full-time and part-time associates required for a new, modern mall practice in Victoria, BC. Partnership/purchase opportunity available. For more information, contact: Dr. Thakore or Dr. Mehta at (604) 585-4044 or 294-0846.

ALBERTA: Associate required for very busy rural practice in St. Paul with possi-

bility of future buy-in. Associate could begin June 89. St. Paul is a town of 5200 people located 200 km northeast of Edmonton, Enthusiastic, quality-conscious individuals are asked to contact: Dr. Larry Hodinsky, P.O. Box 235, St. Paul, AB T0A 3A0. Tel: (403) 645-2232 Bus. or (403) 645-5482 Res.

ALBERTA: ASSOCIATE WANTED — Excellent opportunity for an ambitious, quality-oriented practitioner in Edmonton's newest mall (Mill Woods Town Centre). Opportunity for potential buy-in in the future. Contact Dr. M. Long at (403) 459-9162 or Dr. R. Mah at (403) 489-6088.

ALBERTA—Red Deer: Full or part-time associate for a busy preventative mall practice. Partnership a possibility. (403) 346-1714 after 6 p.m.

ALBERTA—Red Deer: Associate needed for a modern and well-established pediatric dentistry practice in Central Alberta. Red Deer is a thriving community with superb cultural, recreational facilities with a growing industrial base. My practice provides all phases of routine pediatric dental care, including orthodontic treatment and treatment under general anesthetic at the Red Deer Regional Hospital Centre. This is a unique opportunity for an ambitious and dynamic doctor. Partnership could be discussed. Please call: Dr. Vinay Chafekar (403) 347-5224.

ALBERTA—South East: Busy family practice with four treatment rooms plus a smaller satellite practice offers an excellent opportunity for an associate. The office is fully computerized with pan and over 3000 active patients. Reply to CDA Box 2445.

SASKATCHEWAN: Extreme southeast corner of the province. Be fully booked from day one and enjoy total autonomy in your practice. An ideal opportunity for a young grad to build up your assets quickly. Buy-in option available. Contact: Dr. Clay Johnstone at (306) 453-6346.

MANITOBA—Winnipeg: Oral and Maxillofacial surgeon associate required (leading to partnership) for full range O.M.F. practice. Expertise in T.M.J., implants, orthognathic. Fellowship and/or eligibility. Please reply to CDA Box number 2446.

MANITOBA—Winnipeg: Well-established general family practice requires a capable, conscientious and ambitious associate. Excellent opportunity for recent graduate or experienced dentist. Very good remuneration and easy working hours. Excellent full staff with years of experience. A large recall clientele (mostly adults). Position available immediately. For interview call (204) 783-6831.

MANITOBA—Winnipeg: Associate required for very busy, established general practice. Excellent working conditions in a modern environment. Please call Chris at (204) 663-4888.

ONTARIO—Deep River: Tired of the hectic, big city routine? Associate wanted to join very busy, no-frills, small-town dental office. Call (613) 584-2768 and leave message.

ONTARIO—Ottawa: ASSOCIATE REQUIRED Large group practice requires a competent associate to take over an existing practice. Please call Dr. John Connelly at (613) 728-1874.

ONTARIO—St. Catharines: Associate required for modern store-front location. Seeking dynamic, team-oriented individual to join established, highly preventative, general practice with motivated, congenial staff and buy-in potential. In scenic Niagara, minutes from excellent golf and sailing facilities, 20 minutes to US border and 1 1/2 hours from excellent skiing. Reply in writing to CDA Box 2427.

ONTARIO—Windsor: Compatible associate required immediately for 3 operator, general family practice of 35 years in residential area. Ill-health is reducing principal's practice. Home (519) 948-7561.

Auxiliaries

BRITISH COLUMBIA: DENTAL HYGIENIST. Progressive office in Fraser Valley seeks an exceptional person for full or part time position. Enjoy working with our dedicated, yet fun-loving group! We encourage personal development through continuing education. Come enjoy the limits of your profession with us. We offer an attractive wage and benefit package. Please call or write Corrie at (604) 792-5558 (collect). For details: #3 - 9331 Mary St, Chilliwack, BC V2P 4H3.

BRITISH COLUMBIA: DENTAL HYGIENIST. Our office has a professional philosophy based upon honesty and integrity with treatment geared to the patient's best interest. This dedicated, professionally-minded individual should be willing and able to take charge of the perio aspect of our practice, producing the highest quality dentistry as a member of our team. Perio office experience or study club attendance an asset. This is a 4 day week position Tues through Friday. Please call collect (604) 732-7030 (B) or 261-9466 (H).

BRITISH COLUMBIA—Richmond: Our office is looking for a cheerful, motivated dental hygienist. We work a 4 day work week and have excellent salary and benefits. Recent bonuses have included paid vacations to San Francisco and Hong Kong. Please call Gail (604) 273-0575 collect.

ONTARIO: HYGIENIST NEEDED A Stimulating environment for professional growth is offered in our hospital-based preventive practice. Among our patients are physically and mentally handicapped individuals and the medically compromised. The successful candidate must possess excellent clinical skills, patience, compassion, self-motivation and a solid sense of humour. Remuneration is competitive. Please reply to CDA Box 2451.

P.E.I.: DENTAL HYGIENIST Our dental team is seeking an energetic hygienist with a warm personality for a permanent position in our modern practice located in Montague (close to Charlottetown). Emphasis is placed on open communication with our patients and co-workers. Excellent hours and benefits; salary negotiable. For further information, call Karen or Lise at (902) 838-3198.

Opportunities Available

BRITISH COLUMBIA—Langley: Full-time associateship or partnership available in rapidly growing rural area with quick access to Vancouver. Newly-established (1987) practice in mall location requires experienced, caring, dentist to share challenge of providing quality dentistry to 100 + new patients per month. For further information, please call Dr. Pat Cassidy (604) 534-7950 (home), Sundays or Mondays.

BRITISH COLUMBIA—Prince George: Large solo practice available in a group

cost-sharing setting. Facilities are up-to-date and the office is computerized. The practice is both successful and enjoyable. Call Elaine David. Monday-Friday – Daytime (604) 562-5551; Evenings or weekends (604) 562-1927.

BRITISH COLUMBIA—Victoria: PROSTHODONTIST – Existing investment opportunity and professional challenge for qualified prosthodontist. Very busy practice with excellent referral base requires assistance in removable, maxillo-facial and implant practice. Well-located, prestigious practice which has been independently evaluated. For info call (604) 385-1613 or 385-7511.

BRITISH COLUMBIA—Vancouver Suburb: Present owner reducing practice activity. Offers participation in sound modern practice full or part-time. Allows reduced capital demands and lower overhead. Phone (604) 531-7779 days (604) 536-9217 evenings.

ALBERTA—Edmonton: I am searching for a hardworking, ambitious, quality-oriented dentist to practise in a dental clinic situated with a busy walk-in medical clinic. This dental office has all new equipment, including Pan. This doctor should have the desire to succeed inde-

pendently and reap the rewards in one year with a possibility of partnership. Are you that dentist? Please contact (incl résumé): Dr. N. Manji, 9710 – 182 St. Edmonton, ALTA T5T 3T9 (403) 489-1799.

ONTARIO—Ottawa: Modern, well-established periodontal practice requires a full-time associate with opportunity for partnership. Candidate should be a certified periodontist with NDEB certificate and membership in the Royal College of Dental Surgeons of Ontario. Call Dr. J. Kershman (613) 738-1108 or 521-8161.

ONTARIO—Ottawa: FOR SALE/RENT Greenbank Medical/Dental Centre, 139 Greenbank Rd, Nepean, Ont K2H 9A5, 300-600-900 sq ft immediate/1 July 1989. Vendor Take Back possible. Please leave message at (613) 820-4455 or 724-4884 Dr. M. Nash.

ONTARIO—North Toronto: Position available immediately for a Paediatric dentist with Ontario certification in a modern, well-established private practice. Full range of dental care provided from preventive to orthodontic services; well care and special needs (mentally and physically compromised) children and adolescents. Associateship with future

prospects for partnership or cost sharing arrangement. Please reply to CDA Box 2426.

ONTARIO—Toronto: ANESTHESIA ASSOCIATE required for general dentistry practice in Willowdale. Candidate must have anaesthesia/sedation background. Modern five operator, team approach. Partner retired. Position available immediately. Please contact: Dr. J. Mel Hawkins, 4800 Leslie St, Leslie Professional Building. (416) 498-8484.

ONTARIO—Toronto: ORAL SURGERY for sale. High traffic, 2 ops, 1 exam room, full-scope practice, modern facilities. Reply to CDA Box 2439.

QUÉBEC—Montréal: Dentiste bilingue demandé pour travailler à pourcentage sur Côte des neiges, coin Lacombe. Édifice caisse populaire à Montréal (514) 342-1742. Bilingual dentist required to work percentage. Côte des neiges, corner Lacombe, Caisse Populaire Building in Montréal (514) 342-1742.

Opportunities Wanted

BRITISH COLUMBIA: Female, McGill graduate with one year residency, one year general practice experience, seeks established practice south of Kamloops or on Vancouver Island. Will consider associateship with direct view to purchase. Please reply to CDA Box 2448.

Obituaries/Nécrologie

Archibald, L.J.: A graduate of Dalhousie University in 1939, Dr. Archibald conducted a private dental practice in Halifax. He was a Life Member of the Canadian Dental Association.

Couture, Paul: Diplômé de l'École de médecine dentaire de l'Université de Montréal en 1947, le Dr Couture était praticien privé aux Trois-Rivières, Québec.

Dunnett, Frank H.: a graduate of the Royal College of Dentists, Toronto, in 1924, Dr. Dunnett conducted a long-time private practice in Brighton, Ontario. He was a Life Member of the Canadian Dental Association.

Fyffe, A.E.: Dr. Fyffe was a graduate of the University of Toronto dental school in 1941. He conducted a private practice in Napanee, Ontario. He was a Life Member of the Canadian Dental Association.

Jamieson, H.S.: A graduate of the University of Toronto dental school

in 1933, Dr. Jamieson conducted a private practice of dentistry in Moosomin, Saskatchewan, for 52 years. He was a Life Member of the Canadian Dental Association.

Mitchell, Frederick: Dr. Mitchell was a graduate of the University of Toronto's dental school in 1946. He practised dentistry in Blind River, Ontario.

Porter, Charles M.: A graduate of the Royal College of Dentists, Toronto, in 1916, Dr. Porter subsequently conducted private practices in Toronto and Orangeville, Ontario. He was a Life Member of the Canadian Dental Association.

Larue, Louis-Joseph: Né aux Trois-Rivières en 1905 et diplômé de l'Université de Montréal en 1932, le Dr Larue a exercé sa profession quelques années à Montréal puis, à compter de 1936, à Mont-Laurier où il a mis ses compétences au service du public pendant 50 ans.

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Over 14,000 dentists and 1,600 dental students read the Journal of the Canadian Dental Association every month. The Journal has a section exclusively for you — the Marketplace. Whether you are buying a practice, selling a practice, or looking for an associate, we are here to give you the best exposure possible.

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It's About the Money

No doubt the above title will cause readers to sit back and cringe a little in the expectation that they are about to be challenged once again to pay up and be counted as full-fledged members of the dental family. Having written about that and related topics in the past, I feel it is time to issue a different sort of challenge to our professional community. Namely, how generous are we in support of the various educational and community endeavours that need our financial assistance?

We are among the highest income earners in the country. We are constantly inundated with mail and telephone requests for charitable donations to causes of every stripe. How well do we respond? There is some evidence to suggest that we could be doing better. Every dental alumni group in this country needs far more support than it is getting. In an age of government cutbacks, how can we expect our institutions to maintain standards of excellence in teaching and research, unless there is more support from those of us who directly benefitted in the past. There are numerous generous supporters, but many don't bother.

Our communities have given us much. We have an opportunity to give something back, through groups such as the United Way, and other worthwhile community organizations. It is interesting to peruse the statistics of an organization like the United Way. Professionals, specifically dentists, have participation rates as high as 90 per cent in some communities, but as low as 12 per cent in others. I believe it is safe to say that professionals in general are looked to for more support and leadership than they provide. Why is this? It is easy to understand the great generosity of some of our colleagues, but why are there some who don't bother?

Part of the answer lies in the ability of the professional community to organize itself better. Whether we are talking alumni-giving or community-giving, where professionals have become involved and organized themselves, they have been successful. It is a tough arena to join. Giving money is hard enough; asking for it is just plain tough. Fund-raising is a thankless task, but we should all respect those members of our profession who have the courage to get involved. In fact, there is no reason why dentists generally should not lead the way.

Our community responsibility level is high, and extends far beyond the reaches of our profession. Dentists, by and large, are free enterprisers. We run successful small businesses, and the majority of us support the efforts of our federal and local governments to control spending. Are we also prepared to help pick up the slack for those educational and community activities that don't have our economic or political "clout"? The image of the professional as a caring member of the community is important. We can't all do everything, but we can all do better. Ask yourself a couple of questions the next time your university or community needs help. If not you — who? If not now — when? Please think about it.

*Ron J. Markey, DDS, MSD,
Vancouver, B.C.*

Editor's Note: "It's My Opinion. . . ." is an opportunity for individuals to encourage open dialogue on important dental issues and concerns. If you have a strong opinion and wish to share it with the Journal readers, please write to the Editor.

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ESTHETIC DENTISTRY EXTRAVAGANZA

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WHY ATTEND AN EXTRAVAGANZA?

Dentistry changes rapidly every day, so it is more important than ever for dentists and their staff to continue their education. At the same time, many seminars and courses are offered, each claiming to hold the key to success. So why should you attend the popular Esthetic Dentistry Extravaganza?

The Extravaganza is a unique 3-day educational symposium that has been providing the dentist with the newest information on new restorative materials and techniques since 1983.

Extravaganzas are held worldwide and provide education for you and your staff. Well-known clinicians and researchers lecture on the newest developments, and dentists experienced with new materials and techniques conduct hands-on workshops.

Each day of the Extravaganza is packed with presentations by world-renowned clinicians, such as Dr. Ronald Jordan, Univ. of Western Ontario; Dr. Alan Boghossian, Northwestern; Dr. Robert Ibsen, Boston Univ. & USC; Dr. Wayne Barkmeier, Creighton Univ.; Dr. Howard Strassler, Univ. of Maryland; and Dr. Dan Nathanson, Boston Univ.

TOPICS

Clinicians, through slides, videos, and discussion, will present the latest information on topics in restorative/cosmetic dentistry.

- All-porcelain restorations; bonding porcelain laminates to porcelain-fused-to-metal crowns.
- Eliminating sensitivity with reliable dentin bonding.
- Use of glass ionomers in cosmetic dentistry.
- Preparing, finishing, and modifying basic and complex restorations.
- The art of color modification for natural-looking restorations.
- Bonding intraorally to metal, dentin, enamel, porcelain, and composite/acrylic.
- Importance of effectively communicating with patients about esthetic dentistry.

At the afternoon staff sessions, auxiliaries learn how to assist dentists chairside with these new materials and techniques. They will also learn about creating a comfortable office environment, effective practice administration, marketing, and current trends in consumer dental needs.

WHERE TO ATTEND

Extravaganzas are held all over the world to give as many dentists as possible the opportunity to attend, and combine a learning experience with their vacations. The following list is the schedule for 1989.

- Sydney, Australia - April 28-30
- Las Vegas, NV - May 26-28
- Oslo, Norway - June 9-11
- Philadelphia, PA - June 30 - July 2
- Vancouver, BC - July 21-23
- Nashville, TN - Aug. 4-6
- Edmonton, Alberta - Aug. 25-27
- Naples, Italy - Sept. 7-9
- San Juan, PR - Oct. 20 - 22
- San Antonio, TX - Oct. 27-29
- Montreal, Quebec - Nov. 10-12



For information call:
800/433-6628 or
800/233-6628.

FOR MORE INFORMATION

Fees: \$295.00 (U.S.) per dentist if made at least two weeks in advance; (\$345.00 U.S. late registration) \$125.00 auxiliary or family member. Fees include daily continental breakfast, two lunches and a complimentary cocktail party.

- ☐ I want more information on the Esthetic Dentistry Extravaganza checked below.
☐ Please send me information on reduced air and hotel accommodations.

- ☐ Sydney ☐ Las Vegas ☐ Oslo ☐ Philadelphia ☐ Vancouver ☐ Nashville ☐ Edmonton
☐ Naples ☐ San Juan ☐ San Antonio ☐ Montreal

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"I would recommend it to any dentist. It's really exciting. I've enjoyed it."

M.D., Vista, CA

"This is my second consecutive Extravaganza and it won't be my last. These meetings bring me more up to date and it's always interesting to recall what one has forgotten. There is so much going on in this particular field that it is virtually impossible to absorb everything in one go."

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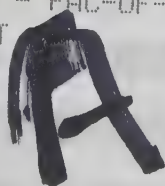
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June 1989

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Published monthly by the Canadian Dental Association at 1815 Alta Vista Drive, Ottawa, Ont. K1G 3Y6. Copyright 1982 by the Canadian Dental Association. Authorized as Second Class Mail Registration Number 5384. Postage paid at Ottawa.

Notice of change of address should be received before the 10th of the month, to become effective the following month.

Subscriptions: All subscriptions payable in advance in Canadian funds in Canada — \$42; United States — \$44; all other — \$46. Subscriptions are for 12 editions, not necessarily conforming with the calendar years.

All statements of opinion and supposed fact are published on the authority of the author who submits them and do not necessarily express the views of the Canadian Dental Association, unless such statements or opinions have been adopted by the Association. The editor reserves the right to edit all copy submitted to the Journal. Publication of an advertisement does not necessarily imply that the Canadian Dental Association agrees with or supports the claims therein.

ISSN0709 8936

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CDA MISSION STATEMENT

The Canadian Dental Association serves the dental profession — and through the profession the Canadian public — as the authoritative national voice and resource for dentists.

In cooperation with the provincial dental associations and affiliated organizations, CDA offers services, in both official languages, intended to support and advise all areas of dentistry and to represent, protect, promote and develop the interests of the dentist as ethical practitioner, professional, educator, student, researcher, business person, citizen and individual.

CDA recognizes a particular responsibility to contribute to the development of national positions and standards related to dentistry, dental education, dental research, dental equipment, dental materials and dental personnel.

CDA is dedicated to the principle that all Canadians should have the best oral health care it is possible to provide; it actively seeks input from and dialogue with governments, consumers and all those interested in dentistry to enable it to serve more effectively both its members and the Canadian public.



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CANADIAN DENTAL ASSOCIATION

JOURNAL

Canadian Dental Association
l'Association Dentaire Canadienne

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Vancouver B.C. site of the CDA Convention 1989
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What the h — — — has the CDA ever done for Dentists?

Not long ago a prominent dentist high up in Canadian Dental Association affairs was at a well attended continuing education lecture in his home “riding”. His sole purpose at the meeting was to spend the day listening and learning from a well recognized clinician. He had set aside the time free from association affairs and responsibilities. No dental politics here. Or so he thought!

During the mid-morning coffee break the dentist from the CDA hierarchy was approached by a confrere — the two had known each other since dental college days. Little did they suspect what was to happen in the next few minutes.

The approaching dentist, jostling in front of the crowded coffee area, called out to the CDA official in a loud voice. Everyone could hear him: — “What the h — — — has the CDA ever done for dentists?” It was bad timing, a bad choice of words, and apparently the wrong person to confront with a sarcastic query.

Perhaps the CDA official had just returned from hours of deliberation at a weekend Association meeting in Ottawa. (He had attended so many meetings lately and they always seemed to be on weekends!). Perhaps he knew too well the dentist asking the question. Perhaps he was just tired and a bit cranky and really didn’t like his coffee interrupted so rudely. Whatever the “perhaps” — few people at the coffee table will forget the response. It was loud, it was impassioned and it went something like this. . . . “Darn you anyway (and the word wasn’t darn!). I’ve known you for over 20 years, since we were in first year dentistry, and in all that time I have never known you to lift a finger for one single, solitary dental activity outside of your own office.

“You’ve never served on a committee, you’ve certainly never volunteered for anything, and I can’t recall seeing you at a business meeting of any association, ever.”

The response continued both in passion and volume, “You wouldn’t even be here this morning if you weren’t forced to gather up a minimum of continuing education points. I noticed you sat at the back so you could slip out frequently to either smoke or gossip or both. I’m not too sure you are remotely interested in the clinician’s topic”.

“And besides”, said the CDA official, “I doubt if you are even interested enough to know that CDA through the efforts of responsible dentists, has achieved more than you can imagine. For example, to name just a few: Your being able to deduct today’s continuing education fee as an expense; your claim of \$7,500 for your RRSP investment; your benefit from the single largest Dental Awareness Plan mounted in history; your assurance that the Accreditation system guarantees only the finest dental people graduate from our colleges; the provision of National Infection Control Guidelines, and a host of other advantages too numerous for me to relate and probably for you to understand”.

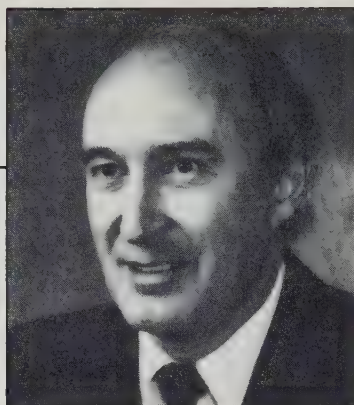
The CDA official paused, there wasn’t a sound in the area. By now everyone was listening. The CDA man generally was not known to sound off so vocally. It wasn’t one of his better days!

Perhaps in exasperation or a wish to get in one last “shot”, the CDA official ended his outburst: “If you are really sincere in your question of ‘what the h — — — has CDA ever done for dentists’, why don’t you get out of your office and find out? There is a Convention coming up in Vancouver at the end of August, attend it. The Board will be meeting, there are top clinicians from around the world, the exhibits are greater in number and more interesting than ever before. If you have the slightest inclination toward an open mind, you can mingle with your fellow dentists and really find out what is going on instead of blindly griping away at me.”

Is there a lesson to be learned in this account of an actual incident? It depends upon what sort of a dentist you are . . . a “doer or a griper”. In any event, the 1989 CDA Annual Convention will be a very enlightening place to be. It’s from August 26th to the 30th. It’s in beautiful Vancouver and it’s guaranteed to be Canadian Dentistry in Action.

P. Ralph Crawford, DMD

Editor: Journal of the Canadian Dental Association



Accreditation — Whose Financial Responsibility?

The accreditation of educational programs for dentists and dental auxiliaries has developed into an undertaking of increasing magnitude. Also, the resources and the support of the accreditation process are finite, and the need to allocate funds in terms of a shift from membership dollars to professional funds, is a priority. In other words, those who benefit the most should support and pay for the accreditation process.

Health care and its costs are increasingly visible, and it is expected that the public will demand that the health professions exercise the standard-setting roles in the best interests of society. Therefore, the accrediting process itself must be held accountable, not merely to the health professions but to a much broader constituency. This includes in varying ways the educational institutions that offer the programs of study in health professional fields, the potential employers of health professionals, the Federal and Provincial governments, students, and ultimately the public at large.

For the future, fundamental changes in the accreditation of health education programs are needed to promote improvement in inter-professional relationships. The professional must provide assurance to society that the accreditation process will be conducted in the public interest. It must also provide a more equitable balance among the many diverse parties having legitimate interest in the accreditation of health educational programs. The importance of the accreditation process to the national certification of dentists, and subsequent provincial licensure of practitioners is significant, and the dental profession has a special interest in ensuring ongoing financial support. In particular, the benefit of national portability of dental qualifications, which is built upon the accreditation process, is not a benefit limited to members of the Canadian Dental Association. It is a benefit which involves every member of the profession. Ideally, every group or constituency vitally interested in the process should and must contribute to its financial support.

At the Interim Board of Governor's Meeting, the ad-hoc committee reviewing financial support for accreditation presented its report identifying current and projected revenue supporting accreditation, and projected expenditures required to support that accreditation. Also presented were proportionate contributions necessary by the groups cooperating in accreditation, including the Canadian Dental Association and other associations, educational institutions, licensing and certifying authorities. All this with the aim of making the accreditation process more accountable and financially self-sufficient. If we deny the process the professional support it requires to continue, then its future is at stake. The success of this venture is in your interest.

*Jack W. Niedermayer, BA, DDS,
President of the Canadian Dental Association.*

Revised legislation deregulates dentistry in New Zealand

Dentists in New Zealand were relieved early in 1988 when the "Dentists Bill" which would have eliminated licensing and allowed anyone to hang out a shingle and practice dentistry, was withdrawn after a massive expression of concern by dentists in that country, and with support from confrères internationally.*

The Bill was redrafted and proclaimed January 1, 1989.

New Zealand's dentists, however, are not really jumping for joy. The new Dental Act focusses on deregulation.

Dr. Lawrie Croxson, Executive Director of the New Zealand Dental Association (NZDA) said "Now there are no legal controls on advertising and what a dentist can and cannot say in advertisements, except if a statement misleads the public in any way. There are also virtually no controls or regulations on ownership of a dental practice except that it is an offence for an owner to interfere with (dental) practice in such a way that it would bring harm to the patient.

"The aim behind the new Bill," Dr. Croxson continued, "is to improve access to dentistry, to make dentistry cost-competitive, by giving dentists and other people the opportunity to do innovative things in dental practice with changes in auxiliary, practice ownership and advertising regulations."

He noted that the Bill in its earlier form was comprised of two parts, "delicensing so that anyone could practice dentistry and deregulating the control of dentistry."

The Dental Act which came into effect in January requires that all dentists and technicians be licenced and controlled under the Act.

The legislation legalizes practice by clinical dental technicians. Dr. Croxson notes

that "dentists here (New Zealand) are concerned about this newly earned right to practice" accorded to dental technicians. "However," he said, "an interesting thing is happening. In the past, dental technicians have operated illegally to make dentures, but now that they have the legal right to practice, they will be strictly controlled by the same disciplinary clauses and registration that apply to dentists. There are more regulations on them now that they are legal."

Dentists will be vigilant

Dr. Croxson said his Association will monitor complaints from the public about dentures made by dental technicians. After "a suitable time," he said, the Association has plans to use the record gathered in a submission to the government as the basis for a further discussion about restricting the technicians' right to practice — "if a significant problem is demonstrated."

Another worrisome aspect of the new Act is that it promotes a free market philosophy, making it illegal to set up controls or barriers on dental fees. There is now "no scale of fees and fees are determined by each dentist," Dr. Croxson explained. "Consumers are to be encouraged to shop around from dentist to dentist. Through this method — which theoretically applies to general goods and services — dental costs will be controlled by the market."

Members of the NZ Association have been surveyed about their intentions regarding advertising. "Very few have indicated they would begin doing major advertising," Dr. Croxson said. He believes the major difference that will emerge is that dentists will spend more

time telling people where their office is located, and in outlining any special services available.

"Certainly dentists can now compete with dental technicians through advertising," he added. Advertising between dentists in the major cities may increase to give the public "more information to go on when selecting a dentist," Dr. Croxson said. "But I think dentists will find that they won't get the return on advertising that they might expect. I don't think dentists will attract enough new patients each week to their offices to pay the costs of extensive advertising."

Other major changes

Some of the other changes brought about by the new Act include specialist registration and the right of dentists to employ "suitably qualified persons" as "surface care" workers. "This", Dr. Croxson says, "refers to people who can clean, polish, apply medicaments, give oral hygiene help, etc., provided these persons work under the direction of a dentist and while a dentist is on the premises."

There is an uneasiness about the deregulation measures, Dr. Croxson is reported to have told Tamara Strom in an article in the ADA News (February 6, 1989), "Up to now they (the NZ dentists) have been practising in a very regulated and structured environment." Δ

* Support was given to the objections of the NZ dentists in this Journal, when they were striving to have the first draft of the "Dentists' Bill" withdrawn early in 1988. Officials of the NZDA voiced appreciation of an editorial, *JCDA Vol. 54, No. 5, page 309*).

U.S. agency will track medical waste and disposal

The JCDA has been informed that the United States Environmental Protection Agency will propose a federal system for medical waste tracking and disposal, due to be in place this summer in New York, New Jersey, Connecticut and seven Great Lakes states, according to *AGD Impact*, the news magazine of the Academy of General Dentistry.

Dentists deciphering rules

Dentists are struggling to comply with a confusing blend of state, county and municipal rules governing medical waste disposal. On top of those rules, privately run landfills can specify what wastes they're willing to accept. With every player acting at once, the situation seems like some absurd, Orwellian image of government gone haywire. Yet dentists and other small businesses are caught in the middle of a great upheaval in environmental policy as the government tries to come to terms with the problem of medical waste disposal.

"Dentistry produces almost no infectious waste," says Carl Langbert, DDS, president of the New Jersey Dental Association. "The bottom line is that we've been made part of the solution to a problem we didn't create."

According to many regulators, however, the growing trend toward medical waste regulation is essential to protect human health, the environment and beachfront economies. The absence of anti-dumping laws became obvious in New York two years ago, when 1,400 bags of infectious waste turned up in a Brooklyn warehouse.

Experts say it's difficult to pinpoint how much medical waste the U.S. health care system churns out. In 1987, EPA estimated that hospitals generate 5,900 tons a day — about 13 pounds per bed per day. Some estimates, however, range as high as 23 pounds. No federal agency knows how much waste emanates from dental offices.

Small generators of waste — those who produce less than 50 pounds of waste per month — won't be exempted from the rules, according to Denise Zabinski of EPA's Office of Solid Waste. The federal law gave EPA the option of exempting small generators, but environmental groups and some waste experts pressured the agency not to grant any exemptions.

Specified types of waste

Under the rules, waste generators will have to specially handle and track

10 types of medical waste:

- cultures and stocks of infectious agents;
- pathological wastes; including tissues, organs and body parts;
- wastes, human blood and blood products;
- sharps;
- contaminated animal carcasses and bedding of animals exposed to infectious agents in research and testing;
- surgical wastes, including soiled dressings, sponges, drapes, lavage tubes, drainage sets and surgical gloves;
- laboratory wastes that were in contact with infectious agents, including lab coats, gloves, aprons and slides;
- dialysis wastes and related supplies;
- discarded medical equipment and parts that were in contact with infectious agents;
- solid wastes that were in contact with infectious agents inside the rooms of quarantined patients (or animals).

The EPA tracking program will expire in two years. Then Congress and the EPA will have to decide whether to set up a national tracking system of medical waste. △

Australian government disbands oral health unit

The oral health unit that served as an advisory council to the Australian government has been disbanded by that government and the Australian Dental Association and dental experts may now have to fill this role.

Since the unit was abolished, late in the Fall of 1988, "the situation remains virtually unchanged," said Australian Dental Association's Executive Director Colin Wall. "The unit is no longer part of the government and what has happened is that there is no intention that it will be reinstated."

The unit was discontinued for two reasons, said Dr. Wall. The first centres on a "question of dollars and cost savings." The second pertains to a worldwide perception that dentistry "no longer has any problems because of the advances made by preventive dentistry."

"Despite the significant advances

dentistry has made, we still have many important issues of oral health to address," he added.

No reliable information source

The main problem facing the government in the absence of the oral health unit is that it will have no dependable means of receiving scientific information and no "easy way of meeting international commitments to oral health," Dr. Wall explained.

The oral health unit had provided expert counsel to the government on scientific, epidemiological, and policy matters. Without the unit, Australia's National Institute of Health will take over the statistical and epidemiological needs for the government. Planning and development of oral health programs, though, don't fit under the wing of a government agency anymore.

The Australian Dental Association has offered to help the Minister of Health on scientific and policy development by setting up a "hotline" of experts to answer questions.

"We haven't received an answer to our offer yet, but really they will have to come to us as an association for this information because there is nowhere else they can go," said Dr. Wall. "We need to feel this out and see how it goes. There may be problems with writing advice for the minister quickly. We're hoping the experts' network can answer the questions as quickly as needed."

"We'll have to work out some kind of relationship to assist them," he continued. "But right now the matter is still very much in the melting pot." △

(Quoted extensively (with special permission) from an article in *ADA News*, February 6, 1989, by Tamara Strom — "Australians lose their oral health unit".)



Health Management Institute established at U. of T.

The Institute of Health Management, offering programs designed to improve management skills of senior managers and administrators in the health care system, has been established at the University of Toronto.

The Ontario Ministry of Health is providing \$334,000 in seed funding over the next three years to establish the Institute, a joint venture of the University's Department of Health Administration, Faculty of Medicine and Faculty of Management.

The Institute is expected to become self-financing with revenues from tuition and seminar fees, as well as private sector support.

"The overall objective is to enhance the effectiveness of the delivery of health care services in Ontario" said Ontario's Health Minister, Elinor Caplan, recently. "Increasing pressures to contain costs require advanced management skills. The Institute is an exciting adventure linking

public sector activity to the latest advances in private sector management techniques."

The new institute will offer a wide range of courses, seminars and short advanced programs, as well as an Executive Master's in Business Administration (Health). The MBA program will run one day a week during the academic term and will be open to individuals employed full-time in senior health management positions.

Typical participants in the institute's programs will include physicians seeking to enter or already holding managerial positions; middle-level managers being groomed for more senior responsibilities; senior administrators wishing to improve their fiscal management skills; and managers from other industries interested in pursuing careers in health care.

A number of bursaries will be available to candidates accepted into the executive MBA (Health) program. Δ

CDA Retirement Savings Plan

Unit values: (Funds are valued weekly)

Fund	Unit values as at	
	April 30, 1989	March 31, 1989
Bond & Mortgage Fund	65.85399	64.36042
Common Stock Fund	15.44804	15.29719
Money Market Fund	44.24766	43.84602
Balanced Fund	27.57263	27.10410

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	*Interest rates as at	
	April 30, 1989	March 31, 1989
1 yr	11.80%	11.55%
2 yr	11.50%	11.30%
3 yr	11.00%	11.05%
4 yr	11.00%	11.05%
5 yr	11.00%	11.00%

(*rates subject to change without notice.)

Total Assets (Market value) of the Plan as of:

	April 30, 1989	March 31, 1989
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Willowdale, Ontario
M2J 4Z3

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only 1-800-268-5418
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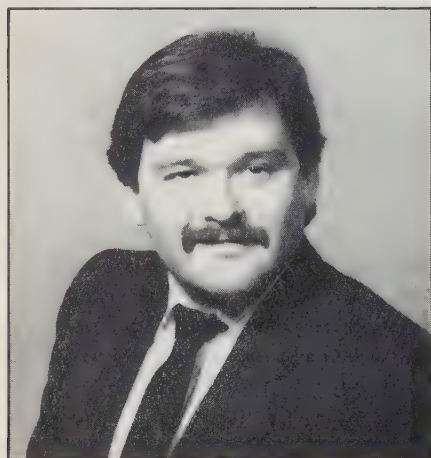


Atlantic Provinces executive meeting

An Atlantic Provinces executive meeting was held in Halifax on March 17 last. Members of the CDA Board of Governors who attended the meeting, seen left to right in this photo, are: Dr. Ian Vogan, CDA Governor, Nova Scotia, Dr. Ray Wenn, Governor, Prince Edward Island, Dr. Toby Gushue, Governor, Newfoundland, CDA Executive Director Jardine Neilson, and Dr. Clem LeBlanc, Governor, New Brunswick. △

Dr. Izchak Barzilay, who conducts a private practice in Prosthodontics in Toronto, was recently the recipient of the Essay Award from the American College of Prosthodontists, in Baltimore, Maryland.

Dr. Barzilay, a graduate (DDS) of the University of Toronto in 1983, received his specialty certificate in Prosthodontics from the Eastman Dental Centre, Rochester, N.Y. in 1986. He is presently involved in the MS program at the University of Rochester's Department of Dental Research.



Dr. Izchak Barzilay

He has been and continues to be, involved in a number of research projects, particularly in the field of dental materials, bonding and implantology.

This honor is not a new experience. Dr. Barzilay won the William R. Jackson



(JCDA Photo by Clarence Metcalfe)

CDA Accreditation Director honored by CDAA

During the recent Interim Board of Governors meeting of the Canadian Dental Association, Ellen McCloskey, CDA, President of the Canadian Dental Assistants' Association, presented an Honorary Membership to CDA Director of Accreditation, Brian Henderson. The honor was awarded, she said, for Mr. Henderson's "continued support and advice to the CDAA." △

Award in Prosthodontics at the University of Toronto in 1983, a Research Fellowship at the Eastman Dental Centre in 1986, the Stanley D. Tylman Award from the American Academy of Crown and Bridge Prosthodontics, in 1987. Also in 1987, he received the Michael G.

Review of Methods of Identification of High Caries Risk Groups and Individuals, Technical Report No. 31, prepared by an international working group of the Fédération Dentaire Internationale's Commission on Oral Health, Research and Epidemiology, has become available.

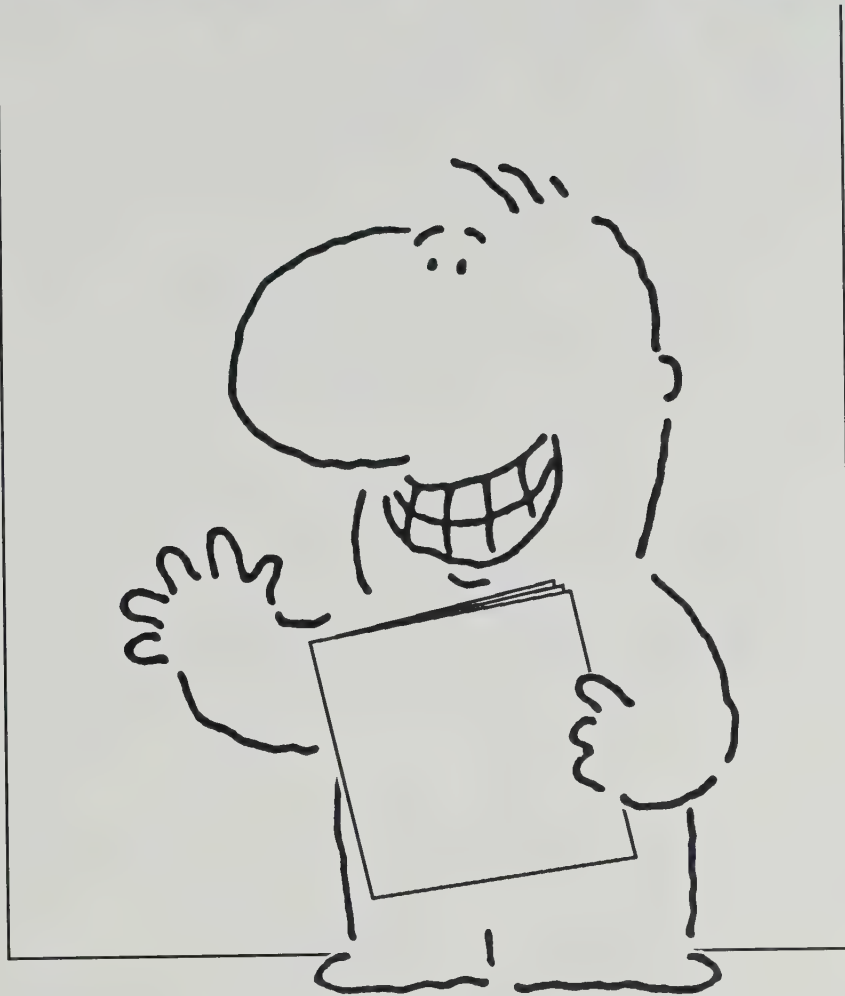
The Report reviews the structure and chemistry of tooth enamel, biological and biochemical factors in plaque, salivary factors, epidemiology, demographic and dietary factors and form and arrangement of teeth.

Technical Report No. 31 recommends that future research on caries risk groups should focus on using multiple predictors and in finding effective combinations of predictors for defined population groups.

More information is available if required, by writing to the FDI, 64 Wimpole Street, London, W1M 8AL, England. △

Buonocore Award from the American Association for Dental Research (Rochester Section) and the Prosthodontic Research Novice Award from the International Association for Dental Research, Prosthodontic Group. △

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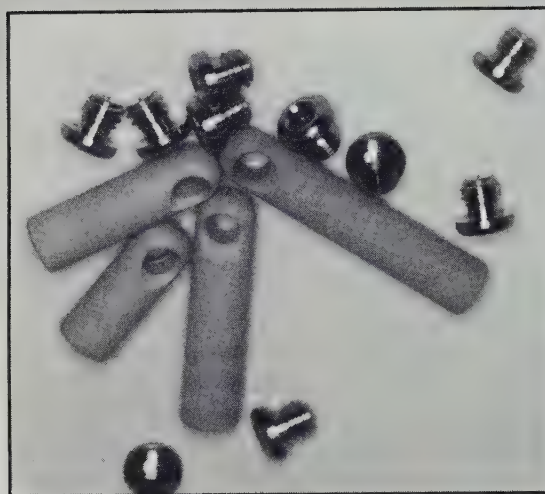


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The Canadian Dental Association thanks the exhibitors participating in our largest show ever, with more than 210 exhibits, featuring the latest in professional equipment, supplies and services.

In addition, a number of companies and organizations have provided services, special gifts and prizes which will make the Convention an unforgettable one for all attendants.

The Canadian Dental Association wishes to thank the following companies:

Air Canada for providing the toll free convention central number for reservations, in addition to a draw for two free tickets to any Air Canada destination (except Singapore and Bombay).

Eurodent the dental equipment and instrument manufacturer who will be hosting the Sunday opening ceremony extravaganza, featuring more than 100 performers and highlighting *Leon Bibb* and friends. All registrants are invited.

Exan for developing the new Canadian Dental Association Computerized Registration Program, the most advanced high tech marketing tool available, and donating it together with the hardware and support system for CDA Conventions, also for organizing the BUSINESS CENTRE, a new service at the CDA Conventions.

Healthco: Healthco and the Canadian Dental Association have announced the draw of a new Honda car to be awarded to one lucky registrant. The draw will be held in the exhibit area on Tuesday afternoon.

Honda Canada: In association with CDA, Honda is organizing a draw to be held in the exhibit area for two prizes to be given on Monday and two prizes to be given on Tuesday. The prizes are: a motorscooter, an outboard motor, a lawn mower and a generator.

L.D. Caulk for helping the CDA in organizing the two hands-on courses of the preconvention and supplying all the materials and instruments and also in supporting the Convention program book.

Ash Temple / Servident for supplying the specially designed pens to be given out to all delegates in their registration kit.

Hoescht for supplying the customized convention kit holder to be distributed to all delegates.

Denco for supplying the memo pads to be distributed to all delegates, and also in supporting the Convention program book.

Smith Kline and French for helping to organize the vaccination clinic, in addition to helping in the printing of the Convention program book.

The Canadian Dental Association expresses its thanks to the following companies for sponsoring lectures at the Convention:

- Nobelpharma Canada Inc.
- Rhône-Poulenc Pharma Inc.
- Smith Kline and French Canada Ltd.
- Canadian Dental Supply Limited

In addition, the CDA expresses its gratitude to the following professional organizations which have played a key role in putting together this meeting.

- The Canadian Fund for Dental Education
- The Canadian Dental Assistants Association
- The British Columbia Dental Hygienists Association
- The Canadian Academy of Oral Radiology
- The Canadian Association of Orthodontists
- The Canadian Association of Public Health Dentists

And last, but not least, the Canadian Dental Association appreciates the timeless efforts of its enthusiastic and hard working convention committee members. Their contribution will make the 1989 CDA Convention the most successful and spectacular event in CDA's history.

*Dr. Michel Jahjah
General Chairman
CDA Conventions*

Vancouver 1989

Preconvention

Saturday, August 26 - Sunday, August 27

Dr. Ronald E. Jordan

Winnipeg, Manitoba

"Clinical Update on Esthetic Composite Bonding: Techniques and Materials"

General practitioners are currently faced with tremendous confusion as a result of an ever-changing and dynamic market situation which involves the introduction of a plethora of new systems, concepts and materials. Anterior composite restoratives are in a constant state of flux. The recent advent of a wide variety of new dentin bonding agents underscores the need for meaningful clinical information on these new materials. The current question of posterior composite materials and their possible role in terms of general practice dentistry is enormously controversial. The current state of the art relative to the use of posterior composite materials constitutes an elusive and frustrating problem for the conscientious general practitioner. To further complicate an already complex situation, oral disease is undergoing a rapidly changing pattern of frequency. This combined with a serious manpower balance situation renders general practice dentistry in the late 1980's most challenging.

This course will deal specifically with update information on:

- Anterior Composite Materials
- Dentin Bonding Agents
- Conservative Treatment of Discoloured and Malformed Dentitions
- Posterior Composite Restorations (time permitting.)

Dr. Irvin A. Roseman

Wilmington, North Carolina

"Successful Endodontics for the 1990's"

Endodontics is a result of careful planning and meticulous applications of scientific principles related to diagnosis, preparation and obturation of the root canal. With proper application and technique, endodontics can become one of the most economically rewarding and productive phases of any dental practice.

This seminar brings to the practitioner the principles necessary to perform predictable and effective endodontic therapy. Through step-by-step procedures, illustrations, and case presentations which will encompass all current concepts in root canal therapy, the participants will easily be able to incorporate these techniques profitably and efficiently into their practice.

Linda L. Miles

Virginia Beach, Virginia

"Practice Management"

This session will feature strategies for making dentistry more rewarding for dentists, patients, and staff. Topics will include: setting the stage for case acceptance; the 3 R's of Motivation/Incentives; marketing tips for attracting and hiring a motivated staff; and dressing for success. You will leave this seminar with hundreds of ideas, inspired to make the changes necessary to meet the 1990's challenge.

Linda L. Miles is a well-known consultant and international speaker in the field of dental practice management and motivation. She is an entertaining, energetic person who speaks from the heart. Her "people-know-how" ability to identify troublesome areas, provide quick and easy solutions to improve office morale and production, and her experience as a former dental assistant and office administrator have made her message well received by dentists and staff across the country. For the thousands who have heard her, Linda's warmth and wisdom have made her program a fantastic learning experience as well as a "shot in the arm" for professionals.

Dr. Michael Goldfogel

Englewood, Colorado

"Advanced Clinical Concepts: A Technique Approach to Restorative and Esthetic Dentistry"

This course discusses new developments in resin materials ranging from biocompatibility of resins to new light cure impression materials. Techniques presentation include many ways to perform esthetic anterior and posterior restorations using both resins and porcelains. Practice management and marketing ideas are explained with special emphasis on new imaging computers for both case diagnosis and presentation. Finally clinical case presentation will follow to summarize the entire presentation incorporating proper material choice as well as correct techniques.

Vancouver 1989

Convention

Monday August 28 - Tuesday August 29 - Wednesday August 30

Christopher Clark

D.D.S., M.P.H.

Vancouver, British Columbia

"Ethical Decision Makings in Dentistry"

The primary goal of this course is to give practitioners exposure to some of the principal issues and background surrounding professional ethics in dentistry, and to provide information, discussion and a practical exercise in moral reasoning. Through a selected case study, selected participants will work through an ethical dilemma with other practitioners and the course instructor in an attempt to understand how others view the everyday ethical problems that dental professionals face.

W. Ian Vogan

D.D.S.

Halifax, Nova Scotia

"Coping with Success"

In educational, social, and economic terms, dentists today are successful. As a Profession they enjoy the trust and esteem of their society. As individuals they have achieved a number of personal goals. They are, in the eyes of the world, the winners in the game. This success, however, does not automatically equate with fulfillment, contentment or happiness. How can we translate external success into internal satisfaction? Must continued success always mean increased stress?

These and other questions dealing with professional burn-out and life-stage transitions, will be discussed, and in the course of the presentation, practical coping strategies will emerge.

This presentation would be well suited for an audience composed of practitioners and spouses.

Ernie Ambrose

D.D.S.

Saskatoon, Saskatchewan

"Predictable Clinical Techniques for Direct Restorative Procedures"

As the dental profession approaches the last decade in the 20th century, general practitioners have a broad range of therapy, dental materials and techniques to choose from when managing (a) the prevention and control of dental disease or (b) the restorative needs for all age groups. However, many direct clinical procedures currently recommended are detailed and technique sensitive; and dentists must systematically and effectively control the "negative factors" in the oral environment to achieve excellence with the end product.

The Clinician will present a variety of adult cases that will clearly demonstrate practical approaches to solving selected restorative problems that occur in everyday practice. Predictable results and performance for a reasonable time period can then be expected when utilizing various high copper alloys and composite resin systems to satisfy some of the functional or reasonable esthetic demands from patients.

Michael Wainwright

D.D.S., M.S.D., F.R.C.D.(c)

Vancouver, British Columbia

"Grieve Memorial Lecture"

"Orthodontics through the Ages: From Six to Sixty"

"Orthodontic treatment is available for all age groups. Optimal treatment timing and treatment options for various problems in children will be discussed with particular emphasis on Class III growth patterns. Orthodontic treatment for adults is in high demand. Recent advances in osseointegrated implants and orthognathic surgical options with orthodontic implications will be presented."

The Murray McDonald Memorial Lecture

Allan Fotheringham

Tuesday, August 29 • 1:00 p.m. to 2:00 p.m. • OPEN TO ALL

The 1989 edition of the Murray McDonald Memorial Lecture, sponsored by the Canadian Fund for Dental Education will feature an address by Mr. Allan Fotheringham.

Canada's best-read political columnist, three-time

bestselling author, panelist on CBC TV's **Front Page Challenge**, Mr. Fotheringham is a columnist for **The Financial Post** and weekly columnist for **Maclean's**.

Consistently witty and controversial, don't miss his update of politics and issues in Ottawa and Washington.

Vancouver 1989

Convention

Monday August 28 - Tuesday August 29 - Wednesday August 30

Crawford A. Bain

D.D.S., M.Sc.

Halifax, Nova Scotia

"Current Concepts in Non-Surgical and Surgical Periodontics"

This presentation is designed to clarify when non-surgical management is likely to be effective, and to review situations when surgical intervention is necessary to establish periodontal health.

Topics to be discussed include:

- Antibiotic therapy as an adjunct to scaling and root planing. A recent multicentered trans-canadian study will be presented, as well as a review of current opinions on indications for drug use.
- Keyes technique - 10 years on.
- Management of osseous defects by orthodontics.
- Flap surgery; conservative or resective?
- Surgical preparation for restoration dentistry.
- Does an implant need keratinized tissue?
- Picking a loser - identifying downhill cases.

Pierre Boudrias

DMD, MSD

Montreal, Quebec

"Prosthodontic Applications Using Osseointegrated Implants"

The rapid development of implantology enables us to restore missing teeth without dental and soft tissue supports.

This presentation will discuss the predictability of the different clinical prosthodontic applications currently utilized for the restoration of a completely or a partially edentulous arch.

Two types of prosthesis/implants commonly used to restore a fully edentulous arch will be compared. The elaboration of a treatment plan will be discussed in relation with surgical fixture placement (multidisciplinary approach), particularly for the restoration of the partially edentulous arch. Special considerations and indications for using the single tooth implant restoration will be presented.

For each treatment modality, the following clinical aspects will be described: examination, presurgical considerations, impression techniques, inter-maxillary relationship, restorative materials.

Jennifer de St.-Georges

Monte Sereno, California

"It's Not What You Say, But How You Say It"

This session will focus on some of the key areas of stressful communication between patient and practitioner and offer realistic solutions. Such questions as "Why is the crown so expensive? My neighbor paid \$150 less!" "My insurance company says the doctor is overcharging for the area!" "Why didn't the insurance company pay more?", will be the questions that you will learn not to dread in the future! Key words and phrases will be shared with the audience to show how a positive attitude by doctor and staff can have a dramatic influence on the practice-patient relationship.

"An Overview: Dental Bookkeeping for Record Keepers"

This course will allow the office staff to fully understand how to set up, control, and monitor the following areas of concern: charges / credits / refunds / adjustments / rebates / working with the CPA / post-dated checks etc. Management forms of all kinds will be discussed. Legal implications for both clinical and management staff are part of the agenda, with emphasis placed on gaining information in the most efficient manner and how to use it, updating records for legal, marketing and management purposes, verbal skills for working with patients to work within your structure.

Larry Cheevers

D.D.S.

Vancouver, British Columbia

"The Tooth Detective" - The Forensic Odontologist

Many dentists do not know the ever increasing role of the forensic odontologist. This presentation will deal with ways and means by which forensic odontologist can help in the identification of bite marks on mutilated bodies. The identification of victims of aircraft accidents. The conviction of suspect in child abuse cases, the determination of the age of the victim through the examination of skeletons.

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Monday August 28 - Tuesday August 29 - Wednesday August 30

Marvin J. Werbitt

D.D.S., M.Sc.D.

Montreal, Quebec

Perry V. Goldberg

D.D.S., M.S.D.

Montreal, Quebec

"Integrating Osseointegrations into Comprehensive Dental Treatment: Restorative and Periodontal Considerations."

The early role of osseointegration revolved around restoring the completely edentulous arch. Newer applications now include the replacement of one or more missing teeth in partially edentulous situations, incorporation of implants into periodontal prostheses as supplemental support where the number or strength of existing natural abutments is inadequate, and the use of implants as a back-up to salvage fixed prostheses failing due to loss of strategic abutments.

The role of temporization, including tooth and/or implant supported provisional restorations, will be illustrated as it pertains both to patient management overall and to tissue management in particular. The clinical and laboratory phases, including impression techniques, framework design, etc., involved in the fabrication of fixed prostheses will be demonstrated in cases ranging from the single tooth through to multiple abutment restorations, with considerable emphasis being placed on the esthetic as well as the functional aspects of the final restoration.

Integrating Osseointegration Into Comprehensive Dental Treatment: Surgical and Periodontal Considerations

No longer limited to use in restoring the completely edentulous arch, new applications have been evolving for the osseointegrated implant. These include replacement of one or more missing teeth, incorporation into periodontal prostheses to compensate for weak or missing abutments, and to salvage failing prostheses.

This presentation will cover a variety of clinical situations, beginning with diagnosis and treatment planning, and including case selection, strategic dental extraction, and periodontal therapy as well as other disciplines as they relate to overall patient management. The surgical installation of Branemark osseointegrated fixtures will be presented in a step-by-step fashion and will include a discussion on flap design and tissue management. Second stage surgery technique and modifications will be described with respect to periodontal and restorative considerations.

Thomas L. Snyder

D.M.D., M.B.A.

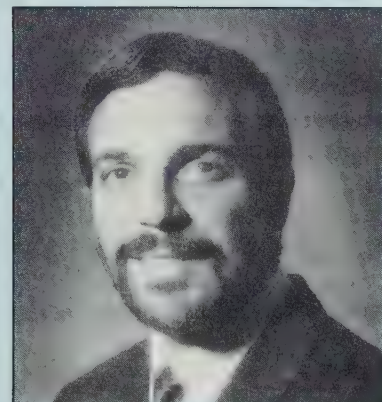
Cedar Knolls, New Jersey

"Selecting a Dental Computer for Your Practice"

More dentists today are considering office computerization. However, since there are many dental software programs to choose from, practitioners often become confused, unnecessarily postponing their decision to automate. This presentation will highlight a strategy for computer selection. Topics will include: cost considerations in office computerization, common software features, comparing software applications, assessing a computer vendor's capabilities, conducting reference checks, hardware and software maintenance, and update on new applications in patient treatment. Strategies will also be discussed for utilizing computers to maintain your patient base and to attract new patients.

"Getting the Most From Your Dental Computer System"

A growing number of dental practitioners have purchased systems in the past several years. Experience has shown that the majority of owners are not taking full advantage of their computer system. This seminar will focus on strategies that will increase the use of your computer in the overall management of your practice. Topics will include system installation, hardware additions, maximizing your staff time in the conversion process, using standard accounting packages, developing a plan to integrate computer applications in your office routine, adopting office policies to your computer system, database utilization and maintenance, system backup and planning for the unexpected. The use of practice management monitors incorporating data from computer reports will also be presented, as well as discussing strategies to maintain your patient base and improve new patient referrals.



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Monday August 28 - Tuesday August 29 - Wednesday August 30

Paul R. Robertson

D.D.S., M.S.

Vancouver, British Columbia

"Local and Systemic Factors in the Pathogenesis of Periodontal Diseases"

This presentation will address the influence of local and systemic factors in destruction of the periodontium. Examples of these factors will include the rigid and severe loss of alveolar bone associated with Human Immunodeficiency Virus (HIV) infection, and the site-specific attachment loss and recession resulting from the use of smokeless tobacco. The discussion will stress that many different forms of periodontal disease exist and that future approaches to treatment will require more sensitive diagnostic methods.

William R. McDonald

D.M.D., M.D., M.R.C.D.(c)

Vancouver, British Columbia

"Medical Emergencies in the Dental Office"

The lecture will discuss the various medical emergencies as they relate to the dental office and appropriate treatment of the same. Emphasis will be placed on the most common medical emergencies to be encountered and as well suggestions given for an appropriate emergency drug kit in the dental office.

Gary B. Gibson

D.D.S.

Vancouver, British Columbia

"Hospital Dentistry - A Referral service for the profession"

Hospital dental departments offer various and multifaceted services for specialized patients who could not or should not be treated in regular dental offices due to treatment difficulty and increased risk factors. This presentation will discuss those services offered by the dental departments of five University of B.C. teaching hospitals, and will outline the types of patients referred for treatment.

Included will be medically compromised, high risk, handicapped, geriatric and unusual patients who require hospitalization for the proper performance of dental care, as well as those experiencing orofacial pain, mucosal pathology and T.M.J. dysfunction. Surgical procedures under general anaesthesia and conscious sedation for both elective patient and the emergency trauma patient will be presented.

Richard V. Tucker

D.D.S.

Ferndale, Washington

"What is new in Dental Castings?"

This lecture will be concerning procedures that can be used in the processing of dental castings which maintain more tooth structure. Discussion will be on a variation of full crown preparations, which allow the castings to be held off the tissues, and 7/8 crowns that can be used rather than a full porcelain type. Many other preparations and procedures will be demonstrated which show new concepts in the use of cast restoration.

Ken Neuman

D.D.S.

Vancouver, British Columbia

"Cosmetic Imaging - A Look in the Future - NOW!"

This presentation will introduce you to the most exciting communication tool in dentistry today. Through the use of cosmetic imaging, you will see a comparison of traditional case presentation, versus case presentation of the future—with greater ease, confidence and patient acceptance.

Graham R. Matheson

D.D.S., M.S.D.

Vancouver, British Columbia

"Restoring Occlusal Vertical Dimension"

Vertical dimension is one of the least precise measurements in an occlusal reconstruction and yet it has a profound effect upon both the design of the restoration and the overall appearance of the face. This presentation is a review of many of the techniques for determining an appropriate occlusal vertical dimension. It also outline several approaches for re-establishing the vertical dimension in severely broken down dentitions.

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Monday August 28 - Tuesday August 29 - Wednesday August 30

Kenneth L. Zakariasen

B.A., D.D.S., M.S., Ph.D.

Halifax, Nova Scotia

"Sonics in Endodontics and Lasers in Dentistry"

This presentation will include a step-by-step description of the clinical application of sonics to clinical practice, as well as a discussion of the various ultrasonic and sonic systems available.

The second part of the presentation will focus on the application of lasers to dental practice. Discussion will include such topics as laser applications in endodontics, preventive therapy, bonding, soft-tissue and hard tissue surgery and sterilization.

Gilles Lavigne

D.D.S., M.Sc.

Montreal, Quebec

"Myofascial Pain and Jaw Dyskinesia: Clinical Aspects and Research Observations"

The management of conditions such as myofascial pain, temporomandibular disorders and oro-facial dyskinesias (bruxism, etc) can be confusing for the dentist. The controversies found in the literature are due to a poor understanding of the etiologic factors, the diagnostic criteria and the value of the different therapeutic modalities. We will review of the etiology, the pathophysiology and the appropriate treatments for each condition.

Dale Miles

D.D.S., M.S.

Indianapolis, Indiana

"The Problem Oriented Patient: Your problem or theirs?"

This program will cover a variety of topics including the differential diagnosis and pharmacotherapeutic treatment of common oral lesions, oral problems of the elderly, and the differential diagnosis of oral facial pain.

The program is designed in three segments to sensitize the clinician to the problems of the elderly and to the additional conditions which may mimic odontogenic pain.

The program will also cover current modes of treatment for common oral lesions such as aphtholous ulcers, herpetic lesions, candidiasis, and lichen planus. The overall goal of the program is to help the dentist *diagnose* and *manage* some of the common oral medicine problems as well as the not so common.

David Frederick

D.M.D, M.Sc.D.

Marina Del Rey, California

"Advances in materials and Concepts to Restore A Decimated Dentition"

The introduction of new and modified composite resins, improvements in glass ionomer cements and advances in direct and indirect bonded restorations provide the dentist with a plethora of treatment options.

This presentation will consider the use of modern materials and procedures in clinical dental practice with an emphasis on achieving long-term success. The lecturer will develop guidelines, recommend materials and devices and detail techniques to restore the dentition to esthetic form and function. Procedures will address the placement of new restorations as well as the repair and maintenance of existing restorations.

"Master the Art and Science of Crown and Bridge Temporization"

An important part of crown and bridge treatment is the fabrication of a provisional (temporary) restoration which is biomechanically sound. This restoration must promote periodontal health, provide comfort and function, and be esthetic. The dentist may either fabricate this interim restoration or delegate a large part of the responsibility to supervised auxiliary personnel. Effective implementation of this expanded duty function improves office efficiency by relieving the dentist of a time-consuming and physically demanding task. It also provides the motivated dental assistant an opportunity for a direct, personally satisfying role in patient care.

This course provides pertinent, state-of-the-art information, on crown and bridge temporization for dentists, dental assistants and dental laboratory personnel. Specifically taught will be multiple techniques and skills that allow one to produce quickly and confidently a physiologically computable, esthetic restoration which is satisfying both to the dentist and to the patient. The curriculum is composed of documented lectures, demonstrations and participation workshops.

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Monday August 28 - Tuesday August 29 - Wednesday August 30

Terry D. Myers

D.D.S.

Walled Lake, Michigan

"The Emergence of Lasers in Dentistry"

Since their development in 1958 lasers have found wide usage in numerous fields including industry, the military and medicine. Though laser research in dentistry began in the early 1960's, its introduction into the dental marketplace is only now being realized. Since 1983, the present investigator has been involved in utilizing Nd:YAG lasers to remove tooth decay and more recently, studying its soft tissue applications.

The present lecture will begin by discussing basic laser principles, followed by a review of the different laser systems used in medicine. It will then continue with a discussion of dental laser research, including both our invitro and invivo investigations and will conclude with a synopsis of future dental laser applications. Following the lecture, an actual laser demonstration will be provided, including both hard and soft tissue examples.

Bryan J. Williams

D.D.S., M.S.D., M. Ed.

Windsor, Ontario

"Current Development in Diagnosis and Treatment in Orthodontics"

This presentation will review the current development in Orthodontic Diagnosis by discussing the current thoughts in aetiology of problems, the new diagnostic systems and the role of computers in diagnosis.

The current orthodontic treatment modalities will cover the appliances used in functional therapy, the diagnostic criterion for each and the mechanisms of action.

The new fixed bracket designs in fixed appliances system will be discussed together with the clerical application of various techniques.

The management of T.M. disorders & orthodontics, a brief review of cases which can be assisted with orthodontic treatment. Surgical orthodontics, types of problems currently dealt with and the rehabilitation of cleft palate and craneofacial anomalies.

John Molinari

Ph.D.

Detroit, Michigan

"Infectious Disease and the Challenge of Infection Control"

Appropriate infection control in dental practice is a necessary, yet sometimes difficult goal to accomplish. The documented risk of hepatitis B and the perceived risk for Acquired Immunodeficiency Syndrome (AIDS) have dramatically increased the awareness of dental professionals of the need for infection control. The use of routine barrier techniques and appropriate methods of instrument sterilization will be emphasized as effective infection control procedures. Program participants will also discern how heat sterilization is monitored and periodically verified. Disinfection procedures utilized and aseptic maintenance of the operator will be considered as components of an infection control routine.

"Hepatitis and AIDS"

"Clinical Update and Dental Considerations"

The incidence of certain infectious diseases is significantly higher among dental professionals than that observed for the general population. The concern over the disease states of Hepatitis and Acquired Immunodeficiency Syndrome (AIDS) has led to the need for increased awareness and understanding by clinical personnel. This presentation will therefore consider AIDS and the three major types of viral Hepatitis with regard to clinical and asymptomatic disease, transmission and diagnostic tests. The importance of these conditions to dental practitioners and auxiliaries will be discussed further by considering the following: long-term sequelae, the Hepatitis carrier state, clinical vaccines, dental treatment of individuals at risk for AIDS, and management of Hepatitis B carrier patients.

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Joel B. Epstein

D.M.D., M.S.D.

Vancouver, British Columbia

"Periodontal and Gingival Involvement in Medically Compromised Patients"

This presentation will include descriptions of clinical symptoms and signs of gingival change and periodontal changes in systemic disease. This will include findings that may be associated with oral pre-cancers, cancers and infections. The presentation will also focus on tissue changes that may be seen in immunocompromised patients, including those with leukemia and those with HIV infection. The presentation will be of interest to dental hygienists as it relates to recognition of tissue abnormalities. Brief discussions of management of these conditions will be made.

HIV Disease and AIDS: The Role of the Dental Team

Oral findings in HIV disease may be the first findings suggestive of infection and may indicate immune suppression. The majority of individuals infected will require oral management during the course of HIV disease and AIDS. A review of the HIV epidemic and AIDS in the Canadian experience will be made. This will lead to discussion of the oral manifestations associated with HIV disease and their present management. The objectives will be to update the dental workers on the current status of the disease in Canada and the need for oral care for individuals affected. Diagnosis and management of the oral complications associated with HIV infection and the need to continue support of the dental needs of these patients will be emphasized.

Fred Weinstein

D.M.D., M.R.C.D.(c)

Vancouver, British Columbia

"Bleaching: Vital and Non-Vital Teeth" "Injectable Thermoplastic Gutta Percha"

Injection moulding in conservative endodontics. Use in problem cases as blunderbuss canal, broken instruments in canal, internal and external resorption, seal of perforations and reverse fillings.

Fun Run

Smile-A-Mile-A-Thon

9 K and 4 K

Monday, August 28, 1989

Time: 7:00 a.m.

Place: Stanley Park

- Transportation
- T-shirt
- Fun prizes

Adults: \$10.00

Children: \$8.00

In order for us to establish the number of participants, please call CDA toll free telephone number **1-800-267-6354 (West)** or **1-800-267-6364 (East)** to reserve your place.

Vancouver 1989

Canadian Dental Assistants Association

Dental Assistants Scientific Program

Registration to the Convention gives access to the entire Scientific Program. In addition, the following is the CDAA Scientific Program. Social Events are open to all by purchasing the appropriate ticket.

Sunday, August 27, 1989 – 5:00 p.m. - 7:00 p.m.

Opening ceremony is open to all. Your badge is your ticket.

Monday, August 28, 1989 – 8:30 a.m. - 11:00 a.m.

This is a participatory round table presentation where both clinicians and participants will share their knowledge and ideas. Due to the limited capacity of tables, seating will be by first come first served.

The following topics will be discussed:

- Ethics and importance of proper charting
- Asepsis of hand pieces
- Rubber dam placement
- Cements
- Matrix bands
- Blood pressure - measurement
- Composites
- Impression materials
- Pit and fissure sealants

Monday, August 28, 1989 – 1:30 p.m. - 4:00 p.m.

Claudia Anderson
Burnaby, British Columbia

"The Art of caring for Patients Professionally"

This honest and positive overview of what it really takes to be called a "professional" will impact participants and expand their perception of this important work in their lives. Understanding ourselves in order to work more effectively with others is critical to being competent as professionals.

Participants will look at their own work styles and create strategies for enhancing the "art of caring" for themselves and others. Ethics and values will be explored as topics for enhancing human potential. This session will prove to be both provoking and heart warming - A validation of "Why we do what we do".

Wednesday, August 30, 1989 – 8:30 a.m. - 11:00 a.m.

Arlene Gladstone

"Stress, Success and Excellence"

This presentation by a panel of well qualified presentors on a variety of topics related to the unique stresses faced by working women in today's world and the available strategies for managing and coping.

This session will explore the signs and sources of stress, its impact on work and intimate relationships and the techniques of stress management. Other subjects that will be discussed are developing assertiveness, dealing with difficult people, finding the perfect boss and how to make your work more fun.

FUN RUN: See information in the Journal.

Allan Fotheringham: See information in the Journal.

Social Functions

Sunday, August 27, 1989 – 7:00 p.m. - 10:00 p.m.

Carnival Night: A fun evening for the singles and the entire family. This event is open to all by purchasing the appropriate ticket.

Monday, August 28, 1989 – 7:00 p.m. - 11:00 p.m.

Black and White Evening. This event is open to all by the purchasing of the appropriate ticket.

An excellent Spouse and Children Program has been planned. Information about these events appear in the Journal.

Exhibits

Access to more than 210 booths at the Convention Centre. Your badge is your ticket. Door prizes will be drawn daily.

For CDAA Members Only

Annual General Meeting of the CDAA

The meeting will be held at the Convention Centre on Sunday, August 27, 1989 from 1:00 p.m. to 4:00 p.m.

CDAA Awards Luncheon

This event is a ticket item to be reserved directly through the CDAA.

Vancouver 1989

Dental Hygienists Program

In collaboration with the British Columbia Dental Hygienists Association.

Registration to the Convention gives access to the entire Scientific Program. The following is an outline of the Scientific Program which is of special interest to dental hygienists. Such events are open to all by purchasing the appropriate ticket.

Sunday, August 27, 1989 – 5:00 p.m. - 7:00 p.m.

Opening ceremony is open to all. Your badge is your ticket.

Monday, August 28, 1989 – 8:30 a.m. - 11:00 a.m.

Dale Miles D.D.S., M.S.

"Radiology - Concepts for the 90's"

This radiology program is designed to update the concepts of radiation risk and quality assurance in the intra-oral and extra-oral radiography. The criteria for prescribing radiography and the potential medicological implication of inappropriately ordering radiographic tests.

In addition, this course will also deal with trouble shooting and correcting common positioning error in the panoramic radiographs.

Monday, August 28, 1989 – 1:30 p.m. - 4:00 p.m.

Crawford Bain D.D.S., M.Sc.

"Periodontal Update"

This presentation will focus on the review of antibiotic therapy as an adjunct to scaling and root planing, when and what to use in patients who can't or won't have surgery. The subject of customized maintenance based on patient's needs will be discussed as well as special maintenance consideration on patient with implants, and extension bridgework.

And finally, this question of how much time is enough in maintenance program.

Tuesday, August 29, 1989 – 8:30 a.m. - 11:00 a.m.

Joel Epstein

"HIV Disease and Aids: The Role of Dental Team"

Oral findings in HIV disease may be the first finding suggestion of infection and may indicate immune suppression. The majority of the individuals infected will require oral management during the course of HIV disease and AIDS. A review of the HIV epidemic and AIDS in the Canadian experience will be made. The objectives will be to update the dental workers on the current status of the disease in Canada and the need of oral care for individuals affected.

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Exhibits

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For BCDHA Members Only

Annual general meeting of the BCDHA will be held at the Convention Centre on Sunday August 27, 1989 from 1:00 p.m. to 4:00 p.m.

Vancouver 1989

Spouses Program

Monday August 28, 1989

Plastic and Cosmetic Surgery Lecture, Breast Cancer Lecture and Lunch

Start the day at 9:00 a.m. with coffee and muffins before participating in a lecture by plastic surgeon **Dr. Richard Warren**. His topic for the day will cover the latest techniques and procedures that are available to patients today in the field of cosmetic and plastic surgery.

After a brief coffee break, **Dr. Joanne Emerman**, a PhD in Cytology, will be discussing new developments in the area of breast cancer.

Lunch will follow at 12 noon in the scenic Prow Restaurant at the Pan Pacific Hotel. Sitting in the Prow Restaurant is as close as you can come to being on an ocean liner. The Prow is dramatically situated in a location that resembles a somewhat baroquely shaped prow. Glass windows on either side provide a constantly changing panorama of seagulls, tugs, freighters, helijets, barges and even seals. In the distance is a fine view of North Vancouver and the North Shore Mountains.

Tuesday August 29, 1989

Sea Bus to Shopping and Lunch

At 9:30 a.m. we will take the Sea Bus located adjacent to the Convention Centre. This popular 400 passengers double ended catamaran is a cross-harbour ferry that links downtown Vancouver to the North Shore in just 15 minutes and is a great way to see the harbour up close.

You will then be disembarking at the Lonsdale Quay which has many shops and services as well as a public market. Enjoy browsing and shopping for a couple of hours through the Quay before a luncheon that will be served at 12:00 in the Loops Restaurant. Loops Restaurant is located in the Lonsdale Quay Hotel and during our luncheon, the shops in the Quay will be putting on an informal fashion show for your enjoyment.

A 2:00 p.m. departure on the Sea Bus will return you to the Convention Centre.

Wednesday August 30, 1989

Your Lifestyle, Your Choice: How Healthy Are You? and Breakfast

The morning will start at 9:00 a.m. with coffee and muffins. Then **Ms. Susan Chernov** from the Fitness Group in Vancouver will present a lecture entitled "Your Lifestyle, Your Choice. How Healthy Are You?"

During the past seven years, Susan has worked with corporations of all sizes, custom-tailoring wellness programs to fit each company's needs. In addition, Ms. Chernov personally conducts Employee Lifestyle and Fitness Assessments, lectures in Diet, Nutrition, Exercise and Stress Management as well as supportive one-on-one consultations on behavior modification. This lecture will run until approximately 11:30 a.m.

Children's Program

Monday August 28, 1989

Science Fair, Imax Theatre and Lunch

At 9:00 a.m. buses will leave the Convention Centre for the Science Fair at the old Expo Site. Here the children will participate in brand new hands-on scientific and adventurous activities. They will include: robots and computers, insects, underwater and outer space exploration, the human body, household technologies, genetic engineering, the physics of light and sound, etc. The entire orientation is "Please Touch".

After a box lunch, the buses will take them to the CN Imax Theatre at the Convention Centre. Here the children will see a film projected onto a five-storey screen. Using film that's three times normal size and a steeply banked theatre, the shows at the Imax Theatre represent the visual apex of film technology.

Pick-up will be in front the Convention Centre at 2:00 p.m.

Tuesday August 29, 1989

Aquarium, Planetarium and Lunch

Buses will leave the Convention Centre at 9:00 a.m. and will take the children to the Aquarium at Stanley Park.

Here they will have the morning to tour Canada's largest exhibit of aquatic life. There are some 8000 specimens of mammals, reptiles, birds, amphibians, invertebrates and fishes. As well, there are whale pools, seal and otter enclaves, a shark tank, freshwater fish galleries, an amazing coelacanth (a kind of fish that is extinct except for one species) display and the outstanding Amazon tropical gallery. During the morning, they will be able to see the Beluga and Killer Whale shows.

At 11:45 buses will take them to the Planetarium at Vancouver's Vanier Park where they will have a box lunch before seeing the latest show which will be entitled "Eye in the Sky". This new film should be an exciting look at the satellites orbiting the earth and also explain the galaxies. As well the Planetarium projector can show the sky from any latitude on earth at any time: past, present or future.

Buses will return to the front of the Convention Centre shortly after 2:00 p.m.

Vancouver 1989

Exhibitor List

A

A-Dec, Inc.
Amadent/American Medical & Dental Corp.
American Dental Association
Aseptico, Inc.
Ash Temple Limited
Aurum Ceramic Dental Laboratories Ltd.

B

Beau Photo Supplies Inc./Polaroid
Belmont Takara Company of Canada
Benson Medical Industries
Block Drug Co.
Brasseler USA, Inc.
Braun Canada
Britley House (Div. of Rutland Biotech)
Buffalo/Bolton Dental Mfg. Inc.
Burroughs Wellcome Inc.

C

C.V. Mosby Co. Ltd.
Canadian Dental Association
Canadian Dental Supply
Canadian Practice Consultants
CDSPI
Cerum Dental Supplies Ltd.
Cerum Ortho Organizers
Charge/Dent
Coe Laboratories/Ici Dental
Columbus Dental/Miles Inc.
Computer Station
Core-Vent Corporation
Cosmetic Concept Dental Laboratory

D

Degussa Canada Limited
Den-Mat Corporation
Den-Tal-Ez, Inc.
Denco Canada Dentaire
Dental Plus
Dental Power of B.C.
Dentawest Dental Supply Ltd.
Dentsply Canada Ltd.
Designs for Vision Inc.
Dialog Medical Systems Ltd.

E

Encyclopaedia Britannica
Eurodent International of America Ltd.
Exan
Executive Dental Supply Ltd.

F

Fine Arts Dental Laboratory
First City Trust – Health Services Group
Frank W. Horner Inc.

G

G. Hartzell & Son
G.C. International
Genie Computer Systems Ltd.
Germiphene Corporation
Gilbert's Dental Supplies Inc.

H

Hanna Management Systems
HCC Healthcare Communication Canada Ltd.
Healthco (Canada) Limited
Hoescht Canada Inc.
Hu-Friedy Mfg. Co., Inc.
Hygienic Corp.

I

Image Uniform Inc.
Inland Metal Distributors
Inter-Dent
Inter-Unitek Canada Ltd.
Interplak/Bausch & Lomb Oral Care Div.
Ishiyaku Euroamerica, Inc.
Ivoclar-Vivadent Canada Inc.

J

J.F. Jelenko & Co.
John O. Butler Company
Johnson & Johnson Inc. – Dental Products
Johnson & Johnson Inc. Oral Health Div.

K

Kerr Canada
Kilgore Canada Inc.

Vancouver 1989

Exhibitor List

L

L.A. Audio Environments
Lares Research
Leeming/Pacquin - Div. Pfizer Canada Inc.
Linda L. Miles & Associates

M

MacDonald Travel Corporation
McNeil Consumer Products Company
MDT Corporation
Medi-Dent Corporation
Medical Mart Supplies Ltd.
Mercedes Software Ltd.
Midwest Dental Products Corporation

N

Nephron Corp. - Dental Div.
Nobelpharma Canada Inc.
Northwest Dental
Novocol Pharmaceutical of Canada Inc.

O

Oral-B Laboratories Inc.
Orbident International, Inc.

P-Q

Pascal Co.
Patient Communications Systems, Inc.
Pfingst & Co.
Philips Medical Systems Canada Ltd.
Premier Dental (Canada) Inc.
Pro/Card "A Div. of Hamer Graphics Inc."
Procter & Gamble Inc.
Prodent International Traders Ltd.
Professional Practice Builders Inc.
Protec Orthodontic Laboratories Ltd.

R

Reddish Stone c/o Pacific Dental Prod.
Rhone-Poulenc Pharma Inc.
Rocky Mountain Orthodontics Canada Ltd.
Roi Corporation
Rule Medical and Dental Ltd.

S

Sci-Can Div. of Lux Zwingenberger Ltd.
Sherwood Medical Industries (Canada) Inc.
Shofu Dental Corporation
Siemens Electric Limited
Sinclair Dental Co. Ltd.
Smith Kline & French Ltd.
Soroka Dental Laboratories Ltd.
Star Dental/Den-Tal-Ez, Inc.
Sulcabrush Inc.
Swiss NF. Metals Inc.

T

Teledyne Getz
Teledyne Water Pik Canada Ltd.
The L.D. Caulk Co. of Canada
The Toronto Dominion Bank
The Upjohn Company of Canada
Trans Canada Dental Ltd.
Tri Hawk International
Troll Plastics Ltd.
Turbine Industries

U

Union Broach/A Health-Chem Company

V

Van R/CADCO/Clive Craig

W

Warner Lambert Canada Inc.
Western Canadian Dental Systems Ltd.
Whaledent International
Whip Mix Corporation
White Sister at Woodward's
Whitehall Laboratories
Whitehead & Associates Ltd.
Williams Dental Co. of Canada
Wright Dental Canada Ltd.
Wrigley Dental Canada Ltd.

X-Y-Z

Zadall Systems Group Ltd.

**Canadian Dental Association Convention
Vancouver 1989**

Table Clinics

Table Clinics are defined as a brief table top presentation or demonstration of five to ten minutes duration using visual aids, and repeated over a 2 1/2 hour period.

Those interested in presenting, write to:



Dr. Bob Clarke
Scientific Program
CDA Convention
1815 Alta Vista Drive
Ottawa, Ontario
K1G 3Y6



Canadian Dental Association Convention

Vaccination Clinic

**Engerix[®]-B
Hepatitis B Vaccine
(recombinant)**

With the cooperation of Smith Kline and French, a vaccination clinic against Hepatitis B virus will be offered to dentists, hygienists, assistants and technicians at a special rate for CDA convention participants.

This 3-dose program includes the injection of a first dose on site and the mailing of the 2nd and 3rd doses after the convention.

If you already have been vaccinated, the National Advisory Committee on Immunization feels that a booster dose after 5 years may be prudent.

ON SITE REGISTRATION ONLY.

Vancouver 1989

How to register for the CDA Convention

Filling out Your Registration Form

1. Register early, some courses have limited attendance.
2. There is only one registration form to be used by all categories of participants.
3. Use one form per person (photocopy for several registrants).
4. Spouses and children should have a separate form for each individual.
5. Total the dollar amount of activities and courses you plan to attend, and make cheque payable to the Canadian Dental Association.
6. If your cheque covers the cost for several registrants, your name or company name should be clearly indicated in the appropriate space on each registration form.
7. Dental assistants and dental hygienists should fill out a separate form for each individual.
8. If hotel accommodation is needed, fill out the hotel reservation form.
9. If travel arrangements are needed, call Air Canada Convention Central for the best rates and services.

Filling out Your Hotel Reservation Form

1. Reserve early. August is a very busy month in Vancouver. We have negotiated for you the best rates possible at many of Vancouver's luxury hotels, but hotel rooms are limited in number.
2. CDA is handling the hotel reservations in house, so you will not be able to reserve directly with the hotel.
3. Use one reservation form per room.
4. Your reservation will be confirmed by the hotel.
5. To guarantee your room for late arrival, you must pay your first night deposit directly to the hotel.
6. Any further changes to reservations should be made through CDA headquarters.

Making your Airline Reservations

Air Canada has been appointed the sole official carrier for the Canadian Dental Association 1989 Annual Convention in Vancouver. Special arrangements have been made with Air Canada to offer convention participants discounts on air fares. To take advantage of this service, you must call Air Canada's Convention Central when booking your tickets (your travel agent can call on your behalf). Dial **1-800-361-7585**. The Convention Central hotlines are open **weekdays, 9:00 a.m. to 5:00 p.m. EST/EDT**. Identify yourself and the CDA convention. Air Canada's convention experts will do the rest. The lowest fare available will be confirmed to you, subject to availability and advance purchase conditions.

Fly Canada's #1 Convention Airline to the 1989 CDA Convention in Vancouver, and SAVE. Through Convention Central, you also have the opportunity to save on car rentals. Ask for details when booking your flight. The Convention Central staff are eager to help in any way.

Not to be overlooked, Air Canada has graciously offered two tickets for any destination it services in North America or Europe as the prize in our advance registration draw. To be eligible for the draw, you must register for the convention before July 17.

Vancouver Trade & Convention Centre ■ August 26 - 30, 1989

With the new computerized registration system, it is *essential* that each registrant fill out a separate form. Photocopy the form for more than one registration. Advance registrations will be accepted until *July 17, 1989* after which they will be returned to the sender. Each on-site registration will be subject to a \$25.00 administrative fee. Please print.

Sex:

(Province)

CDA Membership or License Number: _____

SATURDAY, AUGUST 26

Dr Ron Jordan – COMPOSITES – Lecture

Dentist	\$ 150.00
Staff	\$ 50.00

Dr. Irvin A. Roseman – Endodontics – Hands-on Program	
Dentist	\$ 175.00

SUNDAY, AUGUST 27

McLinda Miles – PRACTICE MANAGEMENT – Lecture

Dentist	\$ 150.00
Staff	\$ 50.00

Dr. Michael Goldfogel – Composites – Hands-on Program	
Dentist	\$ 175.00

DENTIST

Member College of Dental Surgeons of British Columbia	Nil
Member, CDA/ADA (American/Foreign)	\$ 125.00
Non member CDA	\$ 190.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

DENTAL HYGIENIST

CDHA/BCDHA Member	\$ 60.00
Non-member	\$ 90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

DENTAL ASSISTANT

CDAA Member	60.00
Non-member	90.00

Includes: Scientific sessions, exhibits, Sunday Opening Ceremony

TECHNICIAN

TECHNICIAN	\$ 60.00
Includes: Scientific sessions, exhibits, Sunday Opening Ceremony	

OFFICE PERSONNEL	\$ 60.00
<i>Includes: Scientific sessions, exhibits, Sunday Opening Ceremony</i>	

STUDENT

☐ Dentist ☐ Hygienist ☐ Dental Assistant Nil

ACCOMPANYING PERSON/ SPOUSE	\$ 90.00
<i>Includes:</i> Scientific sessions, exhibits, Sunday Opening Ceremony and Spouses' Program including two luncheons.	

CHILD	40.00
<i>Includes:</i> Access to convention, Sunday Opening Ceremony and Children's Program including two box lunches and Carnival Night.	

SOCIAL EVENTS

Sunday • Opening Ceremony – 5:00 – 7:00 p.m. (Incl. in registration) Nil

Will attend ☐ Yes ☐ No

Sunday • Carnival Night – 7:00 – 11:00 p.m.

(following Opening Ceremony) per person \$

Monday • "Black & White" Evening (per person) \$ 40.00

TOTAL \$.....

The above registration fees are paid by

IMPORTANT:

Please make cheque payable to:
and mail to:

Canadian Dental Association

1989 CDA Convention

c/o Canadian Dental Association

1815 Alta Vista Drive

Ottawa, Ontario K1G 3Y6

Cancellation Policy:

- Cancellations received on or before July 17, 1989 – full refund
- Cancellations after July 17, 1989 – subject to a 25% administrative charge
- No refund after August 10, 1989

Dentists registering by July 17, 1989 will be eligible to win two tickets anywhere Air Canada flies in Europe and North America!

1989 CANADIAN DENTAL ASSOCIATION CONVENTION

August 26 - 30, 1989 ■ Vancouver Trade & Convention Centre

Vancouver, British Columbia



Hotel Reservation Form

Please check appropriate category:

☐ Dentist ☐ Hygienist ☐ Assistant ☐ Exhibitor ☐ Office Personnel ☐ Other (please specify) _____

Name: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Telephone: () _____ () _____
(Res.) (Office)

Type of Room

☐ Single ☐ Double ☐ Twin ☐ Other (please specify) _____

Indicate first three hotel choices (by numbering the boxes):

- | | |
|--|-----------------------------------|
| ☐ Pan Pacific (CDA Headquarters) | \$149.00 single / double |
| ☐ Four Seasons (CDA Headquarters) | \$135.00 single / double |
| ☐ Hyatt Regency | \$135.00 single / double |
| ☐ Hotel Vancouver | \$130.00 single / double |
| ☐ Sheraton Landmark | \$110.00 single / double |
| ☐ Hotel Georgia (CDAA Headquarters) | \$ 99.00 single / double |
| ☐ New World Harbourside | \$ 95.00 single / \$105.00 double |

Arrival Date: _____

Departure Date: _____

Arrival Time: _____

Your reservations will be confirmed to you directly by the hotel. This reservation is guaranteed only **until 6:00 p.m.**
Information for guarantees after 6:00 p.m. will be provided with the confirmation from the hotel.
Any future changes to the reservation should be made through the Canadian Dental Association.

Send Reservation Form to:

CDA Convention
Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

DO NOT send a deposit with this Reservation

DEADLINE for Reservations: July 17, 1989

You spend a lot of time explaining proper brushing

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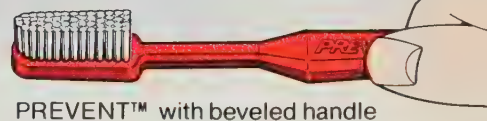


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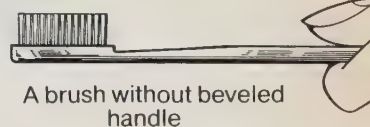
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Au CDSPI, nous faisons tout pour vous aider à continuer de réussir dans votre profession. Vos longues années de travail commencent à porter leurs fruits. Le CDSPI vous a protégé pendant toutes ces années. Aujourd'hui, nous pouvons vous aider à protéger ce que vous avez bâti.

Le CDSPI est votre organisme de services, et vous offre un éventail de services ainsi que les compétences dont vous avez besoin pour maximiser les avantages que vous retirez de ces services. Pour de plus amples renseignements sur la manière dont nous pouvons vous être utiles, appelez-nous dès aujourd'hui.

INFORMATION COMPÉTENCE VOLONTÉ SERVICE



Pour de plus amples renseignements contacter le CDSPI, sans frais, et un agent d'information se fera un plaisir de vous aider.

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Le texte ci-dessus a été approuvé par nos consultants/courtiers et nos assureurs.

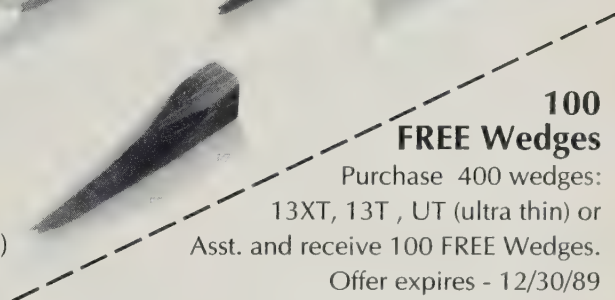
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Director, Dental Services
Dental Division
Calgary Health Services
P.O. Box 4016, Station "C"
Calgary, AB, T2T 5T1
Telephone: (403) 228-7410



**Calgary
Health
Services**

Dental Staff

Le personnel dentaire

1. Adams, J. "Coaching: a management style that really gets results." *Dental Management*. Jul. 1988, v. 28, no. 7, pp. 54-7.
2. Culver, N.C. "Staff incentive pay — yes or no?" *Dental Economics*. Mar. 1988, v. 78, no. 3, pp. 67-70.
3. Dana, A.H. "Expressly for the staff." *Modern Dental Practice*. Jan. 1988, v. 1, no. 1, pp. 16-21.
4. Dietz, E. "Patient acceptance: it's a team effort." *Dental Practice Management*. Summer 1988, pp. 13-4, 16.
5. Elliot, F.V. "Team dentistry: a step-by-step analysis." *Modern Dental Practice*. Jul. 1988, v. 1, no. 3, pp. 9-12.
6. Emphasis. "Dental marketing: strategies for success." *Journal of the American Dental Association*. Oct. 1988, v. 117, no. 5, pp. 563-7.
7. Glaser, P.A. and Glaser, S.R. "Energizing the human core: skills for building teamwork." *Journal of Dental Practice Administration*. Jan.-Mar. 1988, v. 5, no. 1, pp. 8-12.
8. Griffin, A.P. "A guide to staff performance appraisals." *Dental Economics*. Mar. 1988, v. 78, no. 3, pp. 75-7.
9. Kaufman, D.B. "Sink or swim in the marketplace: the staff can make the difference." *Modern Dental Practice*. Jul. 1988, v. 1, no. 3, pp. 13-16.
10. Koester, K. "Your right to know." *RDH*. Mar. 1988, v. 8, no. 2, pp. 22, 24, 26 passim.
11. Levoy, B. "Improve your office climate." *Dental Economics*. May 1988, v. 78, no. 5, pp. 68.
12. McCann, D. "Emphasis. Building a winning team: dentists and their staff." *Journal of the American Dental Association*. Nov. 1988, v. 117, no. 6, pp. 707-11.
13. McNally, K.T. "Employer review." *CDS Review*. Jun. 1988, v. 81, no. 5, pp. 11.
14. Miles, L.L. "Employer/employee relationships." *Dental Management*. Aug. 1988, v. 28, no. 8, pp. 65-6.
15. Miles, L.L. "Is chitchat killing production?" *Dental Management*. Jun. 1988, v. 28, no. 6, pp. 65-6.
16. Miles, L.L. "The no-holes schedule." *Dental Management*. Jul. 1988, v. 28, no. 7, pp. 63-5.

17. Muir, J. "Practice staff: ending the contract of employment." *British Dental Journal*. Nov. 19, 1988, v. 165, no. 10, pp. 373-4.
18. Muir, J. "Practice staff: terms of the contract of employment." *British Dental Journal*. Nov. 5, 1988, v. 165, no. 9, pp. 342-3.
19. Muir, J. "Practice staff: recruitment." *British Dental Journal*. Oct. 22, 1988, v. 165, no. 8, pp. 229-300.
20. Moawad, K. "Employee motivation." *Contact Point*. Summer 1988, v. 66, no. 2, pp. 18-21.
21. Noble, S. "A new look at staff meetings." *Dental Economics*. May 1988, v. 78, no. 5, pp. 65-6.

One copy of the above package of articles is available for \$5.00 to all CDA members and for \$10.00 to non-members. (Ontario residents, please include 8% sales tax.)

LIBRARY SERVICES

As a convenience to all CDA members in the various time zones in Canada, it is now possible to call the CDA Library, between 4:30 pm and 8:30 am Ottawa time, in addition to during regular library hours (8:30-4:30 EST)

After hours: (613) 523-5482

Daily: 1-800-267-6354 (Western Canada and area code 709)

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FAX: 613-523-7736

Les membres de l'ADC peuvent obtenir pour 5\$ et les non membres pour 10\$ une copie des articles de la bibliographie ci-dessus.

SERVICES DE BIBLIOTHÈQUE

Pour mieux servir les membres de l'ADC habitant dans les différentes zones horaires du Canada, la Bibliothèque de l'ADC dispose maintenant d'un service téléphonique de 16h30 à 8h30, heure d'Ottawa, en plus des heures ordinaires (de 8h30 à 16h30, HNE).

En dehors des heures ordinaires:

(613) 523-5482

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1-800-267-6354 (l'Ouest du Canada et la région dont le code est 709)

1-800-267-6364 (l'Est du Canada, sauf la région dont le code est 709)

Programme informatique

Envoy: CDN.DENTAL.LIB

FAX: (613) 523-7736

22. Schwartz, S. "Motivating the dental staff." *Dental Clinics of North America*. Jan. 1988, v. 32, no. 1, pp. 35-45.

Recent Acquisitions

Waxman, David: *Hartland's medical & dental hypnosis* 2nd edition, London: Bailliere Tindall, 1989, 501 p., 1 copy.

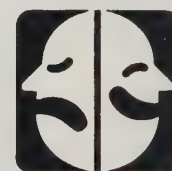
Perspectives on oral manifestations of AIDS: diagnosis and management of HIV-Associated infections, edited by Paul B. Robertson, John S. Greenspan, Littleton, Mass.: PSG, 1988, 216 p.: ill., 1 copy.

Bengel, Wolfgang. *Differential diagnosis of diseases of the oral mucosa*, Chicago: Quintessence, 1989, 361 p.: col. ill., 1 copy.

Dental materials: properties and selection, edited by William J. O'Brien, Chicago: Quintessence, 1989, 603 p.: ill., 1 copy.

Quality evaluation of dental restorations: criteria for placement and replacement, edited by Kenneth J. Anusavice, Chicago: Quintessence, 1989, 424 p.: ill. (some col.) 1 copy. Δ

Down in the Mouth?



Let the CDA Library put the smile back on your face.

We can find information for you, at a minimal cost, on everything from appointments and scheduling to third molar extraction. Just call us or write to:

Library

Canadian Dental Association
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Ottawa, Ontario K1G 3Y6

1-800-267-6354 Western Canada and Area Code 709

1-800-267-6364 Eastern Canada Excluding Area Code 709

PARTIAL REMOVABLE PROSTHODONTICS

F.J. Kratochvil

Montreal: W.B. Saunders Company 1988
207 pages
19 colour / 484 Black & White Illustrations

In the preface the author states that this book presents his own basic philosophy and concepts. It is added that this work is not intended as a reference textbook for evaluating and describing other philosophies of removable partial denture treatment. This textbook consequently provides an insight into the teachings of this notable author in the field of removable partial dentures.

This concise book is divided into 20 chapters which are well organized, attractively laid out and make for easy reading. Most subjects are dealt with in some brevity, so the reader is readily able to grasp the basis of the concepts the author imparts. The sequencing of the chapters is fairly conventional for a text dealing with this subject. The first two chapters deal with principles and objectives of treatment and the components of the removable partial denture and their functions. Chapters three to nine deal with details of the various components advocated, types of partial dentures, design principles and design sequence. Chapter 10 is interesting in that it considers the task of carrying out a preliminary survey in terms of determining the "Most Advantageous Treatment Position". Chapter 11 looks at diagnosis and treatment planning in a very general way. Chapter 12 describes the procedures to be carried out for intraoral preparation and is broadly based with reference to various aspects of both hard and soft tissue preparation. Laboratory communications and instruction are dealt with in Chapter 14. This chapter is regrettably extremely brief and does not convey a great deal of information on this important aspect. Chapters 15 through 19 consider the clinical phases of treatment. Chapter 20 is an overview of laboratory procedures and concludes with a summary of the clinical procedures, appointment by appointment.

While the sequencing of the chapters is conventional, some of the component design concepts are not. This may create some confusion for the reader who does not have a sound knowledge of removable partial denture design concepts.

The book is well indexed and well illustrated. There are 19 colour illustrations on four plates at the beginning of the book. Regrettably several of the colour illustrations do not reproduce well. At the end of each chapter a short list of references is provided.

This book is recommended for the practitioner with a special interest in removable partial dentures or for those with a teaching commitment in this area of prosthodontics.

This book was reviewed by:
John F. Wolfaardt, BDS., MDent., PhD
Associate Professor
Division of Removable Prosthodontics
University of Alberta
Edmonton

PRINCIPLES OF ENDODONTICS

J.M. Mumford &
N.M. Jedynakiewicz

Quintessence Publishing Co. Ltd.
London 1988
207 pages.

This book was written in a simple and systematic manner primarily for undergraduate dental students and general dentists wanting an update of clinical endodontics.

The text is divided into 16 chapters, and the central theme is clinical endodontics. The first chapters deal with pulp disease, diagnosis and treatment planning. These chapters are short, simply written and very well illustrated with photographs.

The authors discuss bacteriology, canal anatomy, rubber dam application and endodontic instruments as well as root canal techniques. Each subject is covered briefly without any superfluous details or references. Endodontic surgery and treatment problems round out the topics.

Overall, the subjects are covered with adequate examples and explanations. However, an expansion in the basic sequence and manipulation of the instruments used in canal preparation, as well as an increased emphasis on the importance of constant irrigation, would improve the content of the book. Some important references would also be helpful to those students who wish to expand their knowledge on a particular aspect of endodontics.

All in all, this book would be a welcome addition to any dental student or dentist

wishing to update and improve his basic knowledge of endodontics.

This book was reviewed by:
Herb H. Borsuk, DDS, MScD, FRCD(C)
Assistant Prof. & Director of the
Division of Endodontics,
McGill University Faculty of Dentistry

ESSENTIALS OF DENTAL TECHNOLOGY

Katsumi Tamura /
James Fowler, Jr.

Quintessence Publishing Co., Inc., Chicago,
1986, Soft Cover, 549 pages

This book could more aptly be entitled "An Introduction to Some of the Essentials of Dental Technology". For while it provides specific practical information for some technical procedures, it certainly does not cover all of dental technology, nor does it extend much beyond the basics.

To the author's credit, the detailed illustrations and photographs are "Quintessentially" well done. The text is essentially an atlas for specific procedures. Strategically placed first is a chapter emphasizing the importance of occlusion to the art and science of dentistry.

Every chapter begins with a series of relevant definitions. Waxing techniques are elaborately illustrated. A brief history and classification of articulators is included, as are discussions of the face-bow and the hinge axis. Step by step practical usage of several commonly available semi-adjustable articulators is described.

Fabrication of single crowns and bridges, metal and ceramo-metal, is outlined. Sequential procedures from cast and die systems through to finishing and polishing are presented. Conspicuously absent are alternative spruing techniques, especially for multiple castings. The only soldering technique mentioned is post porcelain soldering.

Chapter seven, on ceramo-metal bridges, features 10 pages of color photographs detailing porcelain addition to the metal substructure. Much to my personal satisfaction, full contour waxing is emphasized for ceramo-metal restorations. While it is possible to obtain clinically acceptable results without full contour waxing, the probability of a successful long term technical result is greatly

diminished if this essential step is ignored.

While "Essentials of Dental Technology" might well prove to be a useful benchside (soft cover) volume for the neophyte technical or dental student, it would not constitute a complete library on dental technology. It is an introductory recipe book for some specific procedures. There is minimal information on removable partial dentures and none on complete dentures. Suggestions to improve dentist-technician communication would have been useful. No information on porcelain or composite inlays, onlays and veneers is included, nor is there any mention of all-ceramic restorations other than the traditional porcelain jacket crown. More advanced technicians and dentists would gain little from reviewing this text.

*This book was reviewed by:
Dr. J.K. Sutherland
College of Dentistry
University of Saskatchewan
Saskatoon, Saskatchewan*

Obituaries/Nécrologie

Brotman, A.C.: A graduate of the Universities of Manitoba and Toronto, Dr. Brotman conducted a longtime practice in Winnipeg. He was one of the founders of the School of Dentistry in Jerusalem. He was a Life Member of the Canadian Dental Association.

Dyer, Robert E.: Dr. Dyer was a graduate of the University of Toronto Dental School in 1945. His career involved service with the Canadian Forces Dental Services.

Farrell, Herbert A.: A graduate of the Royal College of Dentists, Toronto, in 1924, Dr. Farrell conducted a private practice of dentistry in the Toronto area for 58 years. He was a Life Member of the Canadian Dental Association.

Frost, Louis James, MD, DDS. Dr. Frost was a graduate in dentistry from Dalhousie University in 1955. He had conducted a practice as an oral and maxillofacial surgeon in Ottawa from 1966 until illness forced an early retirement.

Grace, Timothy J.: A native of Ireland, Dr. Grace graduated in dentistry from the University of Alberta, in 1970. He conducted a private practice in Burnaby, British Columbia.

Matiowsky, Frances M.: A graduate of the University of Manitoba in 1979, Dr. Matiowsky succumbed to cancer at the age of 33. She was a member of the part time staff of the Faculty of Dentistry, University of Manitoba, and was an instructor in the School of Dental Hygiene.

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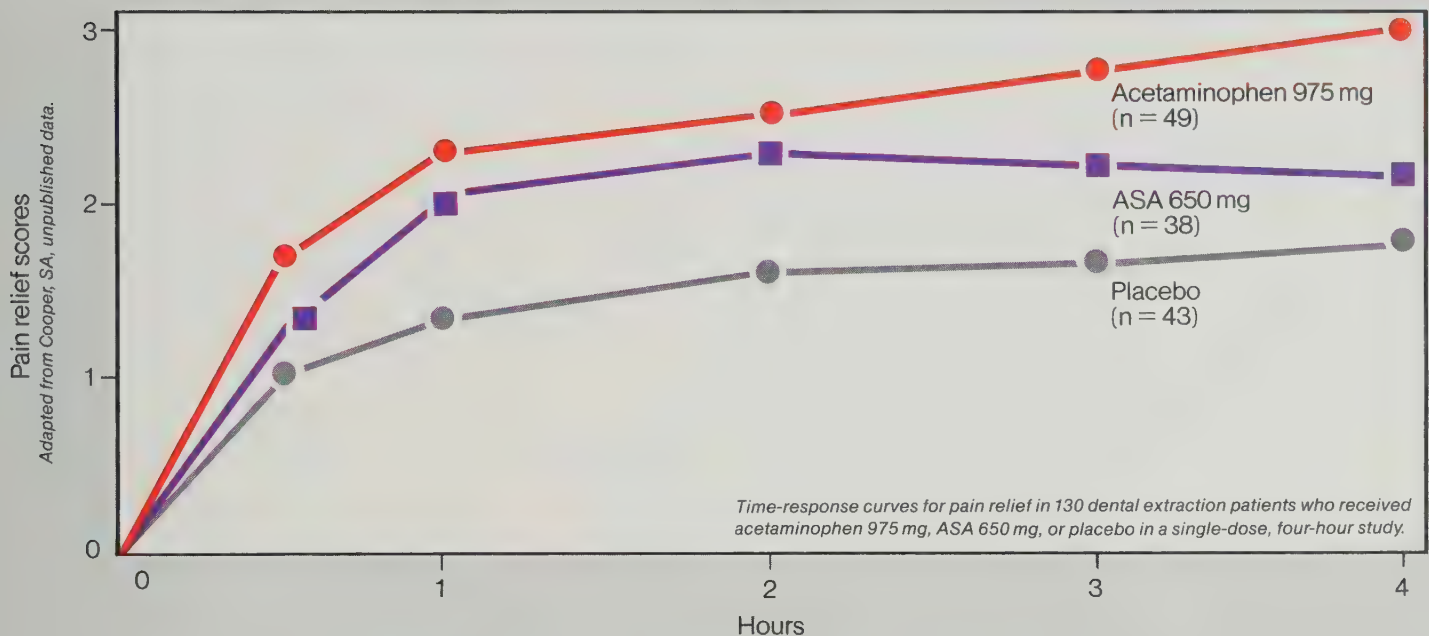
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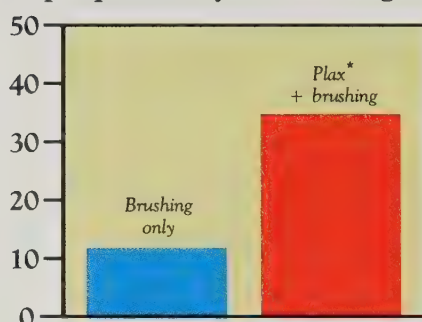
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A surprising article

Re: CDA J Vol 55(1): 49-53, Jan, 1989
The use of Nuclear Medicine in the diagnosis of Paget's disease of the mandible

There are major discrepancies with the contents of this article with which I would like to take issue. I am surprised that this case report was accepted for publication in the CDA journal.

It would appear that the accuracy of the diagnosis is critical to the paper; however, the evidence given to support the diagnosis of Paget's disease is scant and equivocal. The diagnosis should primarily be based on clinical, biochemical and radiologic examination.^{1,2,3} Biopsy is usually not indicated as opposed to being "traditional" as stated in the abstract. Worth states that biopsy is usually not necessary because the radiographic appearance is characteristic. The complications of biopsy are listed and the morbidity that this may entail contravenes biopsy. The patient had a previous biopsy performed and the results were not even reviewed.

Clinical features include enlargement with or without deformity of the involved bone and bone pain.^{1,2,3,4,5} Soft tissue swelling is *not* consistent with this bone disease. In this case, there was no bony enlargement of the mandible and there was soft tissue swelling. Both these features make the diagnosis of Paget's disease unlikely. When the mandible or maxilla is affected, the entire bone is involved;^{6,7} a feature belied by figures 1-5. In all cases reported of monostotic Paget's disease of the mandible, there was recording of enlargement of the bone so that the patient's complaints related to ill-fitting dentures or movement of the teeth apart as the jaw expands.^{4,6,8,9,10} In this case, there were no clinical signs of enlargement and there were no radiographic features of alteration of the trabecular pattern of bone consistent or even suggestive of Paget's disease. Based on the radiographs presented, the most likely diagnosis is chronic sclerosing osteomyelitis.¹¹

The biochemical studies may be normal when only one bone, such as the mandible is involved. However, according to the laboratory work-up on this patient, a 24 hour urinary hydroxyproline was not included in the list of tests performed on this patient (see pg. 50); yet in the discussion, the authors state that the "uri-

nary hydroxyproline. . . were all within normal limits". This is an important test because it is very specific and has been reported to be elevated in a case of monostotic Paget's disease of the mandible⁸ where the alkaline phosphatase was normal.

The authors stress that the diagnosis was heavily dependent on the Technetium bone scanning. This modality will demonstrate areas of active bone formation but it is not specific for Paget's disease. It may also be seen to be "hot" in fibrous dysplasia, periapical cemental dysplasia, osteomyelitis, any benign or malignant bone-forming neoplasm, osteoblastic metastases to the jaws and even periodontal disease. Any disease which induces bone formation will result in a positive Technetium bone scan. The appearance of monostotic Paget's disease of the mandible in bone scans is characteristic in that the entire mandible is involved ("hot") from condyle to condyle. This appearance may be highly suggestive but is still not a pathognomonic sign.⁷ In this case, the scans shown do not even present this "characteristic" feature.

That the patient's symptoms improved with specific anti-Paget's disease therapy may be either coincidental or unrelated, but it is not grounds for a diagnosis.

This article bears a direct effect on the perceived quality and credibility of the journal which in turn has an influence on the standard of future contributions and readership. Critical review by the appropriate specialists is mandatory to ensure quality and accuracy.

Linda Lee, DDS, MSc, Dipl. ABOP, MRCD(C)

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11. Personal communication: M.J. Pharoah, Assistant Professor and Head Department of Radiology, Faculty of Dentistry, University of Toronto.

A response

The Paget's disease article

There is no question as to the present ideal diagnostic laboratory and clinical criteria required to establish a definitive diagnosis of Paget's disease. Dr. Lee's statement that a definitive diagnosis of monostotic Paget's disease of the mandible based solely on the mandibular bone scans is not acceptable remains apparently a confirmed one by our team. The use of the term "definitive" was based on the overall clinical opinion based on the panoramic and Technetium mandibular views as interpreted by two radiologists.

In this patient, all appropriate laboratory values were within normal limits except for the Technetium bone scans of most of the mandible and the panoramic radiograph of the edentulous mandible. Regarding the 24-hour urine hydroxyproline values, Dr. Lee mentions that these *may* become abnormal in monostotic Paget's disease.

Assuming that there are variations to laboratory test value interpretations as relating to a developing disease process, it would seem reasonable, therefore, that exceptional case presentations warrant publication in order to better inform our general practitioner colleagues of such events.

Chronic osteomyelitis (sclerosing) was first on our list of differential diagnoses. The patient experienced mild relief of her severe mandibular body pain with a regimen of antibiotics, but the clinical response was not as expected in cases of Chronic sclerosing osteomyelitis. This was reported by the patient as told her by the treating physician at the time.

Written reports of the diagnosis of monostotic Paget's disease of the mandible on panoramic and Technetium studies are in the patient's chart made as part of the overall multidisciplinary team's clini-

cal evaluation prior to definitive treatment. Incisional bone biopsy to support this conclusion prior to initiating definitive therapy was refused by the patient. Due to this refusal and the fact that further information regarding an apparent previous biopsy was not tracable, if indeed one had been done, the general consensus of the experienced medical team was made to treat the patient as an unusual presentation of monostotic Paget's disease of the mandible.

According to the Shorter Oxford English Dictionary, the word "tradition" implies, "... a long established and generally accepted custom, or method of procedure ... (which may be) now rare". As a surgeon, traditionally, the establishment clinically of a definitive diagnosis of Paget's disease necessitated an incisional bone biopsy, among other procedures.

Once the decision to treat with specific anti-Pagetoid therapy was made and treatment initiated, the patient's condition significantly improved; actually, it dramatically improved on both subjective and objective evaluations (and repeated scanning). This fact may well be coincidental and unrelated, but at the time it was quite welcome.

As health care professionals, our goal is to treat patients to the best of our abilities. Laboratory results in many cases demonstrate disease. When such is not the case or when specific testing strongly suggests the development of a certain disease process, then the clinician's experience and judgment are probably the best ingredients to achieve this goal.

All guidelines regarding pre-publication review were adhered to on the authors' part. Indeed, the article was submitted months ahead of the publication's date in anticipation of interesting reviewers' comments prior to acceptance for publication.

A.J. Camarda, DDS, MSc, MRCD(c)

Assistant Professor,
Oral and Maxillofacial Surgery

A reply to Dr. Lee's letter

Re: Camarda, A.J., Brosseau, J. Dupuis, R., The Use of Nuclear Medicine in the Diagnosis of Paget's Disease of the Mandible. J. CDA 55(1): 49-53, Jan. 1989.

The article in question, by Drs. Camarda, Brosseau and Dupuis consists of a good honest report of a difficult clinical situation and presents a review of current clinical literature on Paget's Disease. The laboratory work-up was thorough as was

the differential diagnosis that was presented by the authors. I do agree that it was unfortunate that the previous biopsy report was unavailable to the authors. The article also serves to introduce the concepts of Nuclear Medicine and "Bone scans" to the dental profession. Concepts such as these could prove helpful to those dentists working in a hospital environment.

Dr. Lee's letter has some worthy points; but in general it relies heavily on the classic case scenario of Paget's Disease. Levine *et al.* state:

"Paget's Disease (osteitis deformans) is not a difficult diagnosis when presented with typical radiographic features. However an atypical appearance or an unusual location can be a diagnostic challenge."¹

In fact Ziegler states that the differential diagnosis is rarely so difficult that a bone biopsy is required.^{2,3} In this case the previous biopsy results, though potentially quite helpful, are unavailable to us.

There are a few other points of Dr. Lee's that I would specifically like to address. It is not correct that "soft tissue swelling is not consistent with this bone disease." I have seen numerous sabre-shinned individuals with warm soft tissue swelling overlying their boney deformity. Though boney enlargement is not reported per se, the patient in this case report did present with denture intolerance. Incipient boney enlargement may be difficult to detect initially in the edentulous mandible and denture intolerance may be a first sign of this.

With regards to the radiographic appearance of the patient's mandible, I refer Dr. Lee to the authors' excellent explanation of phases I, II and III on page 51 of the article under the heading "Discussion."

The usefulness of Technetium Scans in Paget's Disease is well established. Meunier *et al* reported that bone scans demonstrated 8.3 per cent more Pagetic sites than roentgenograms.⁴ Moreover Vellenga, Bijvoet and Pauwels have discussed the information derived from bone scans. Uptake from scans appears to correlate well with grades of radiologic deformation and bone pain. The total skeletal uptake correlates well with the severity of biochemical abnormalities.⁵ They report that during successful treatment the bone scan improves "impressively." This also occurred in the case reported by Drs. Camarda, Brosseau and Dupuis.

It is correct that the scans in this case do not show the mandible to be involved from condyle to condyle, as reported by

Mailander⁶ who used the term "The Blackbeard Sign" to describe the scan's appearance. It is quite definite however, that a great deal of the right mandible is involved on the bone scans and that this extends well beyond the midline onto the left side of the lower jaw. Perhaps we could coin the term a "partial Blackbeard's Sign" to describe these scans.

While it is true that a "hot" bone scan is not specific for Paget's disease the fact is that the patient's symptoms and the bone scans *both* improved with anti-Paget treatment. The authors report six years of follow-up with the occasional Pagetoid flare-up also well controlled pharmacologically.

I do feel that this article is worthy of print in our Journal. It serves us by informing the dental profession of potentially useful modalities in diagnostic radiology. Articles of this nature will help keep our profession well informed.

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George K.B. Sandor, DDS, MD, Dipl.
ABOMS, FRCD(c)

Resident in Plastic Surgery,
University of Toronto.

'License' or 'licence'?

The Journal of the Canadian Dental Association, March '89, Vol. 55, No. 3, Page 168 — note the word "licenCe"! If you look at your driver's licenCe, you'll see how to spell it!!

Dr. J.J. Mitchinson,
Niagara Falls, Ontario

Editor's Note: This is the second time Dr. Mitchinson has caught us on the same word. Shame on us! A quick check of the Canadian Press "Caps and Spelling" reminds us that "licence" is the noun and "license" is the verb. For punishment each of the Journal staff members has written BOTH words a hundred times.

Unerrupted third molars

The recent article by Stephens *et al*¹ will undoubtedly trigger a voluminous response, and I shall attempt to keep this letter brief. Many will agree with the authors with regard to the low incidence of non-inflammatory disease associated with unerupted third molars. Many will join them in condemning the removal of unerupted teeth without due consideration of the anticipated risks, costs, and benefits. There are problems, however, with their evaluation of the incidence and significance of pericoronitis.

During my earlier career, I worked in a busy Dental Hospital in the British Midlands. Pericoronitis was the third cause of pain in emergency patients following pulpal pain and periapical inflammation. During a typical day, several patients presented with acute pericoronitis. This ranged in severity from mild discomfort to life-threatening cellulitis. Removal of asymptomatic third molars was undertaken much less commonly than in Canada or in Britain today for three reasons. Most oral surgeons removing third molars were salaried: there was no financial incentive. Secondly, most patients were motivated to dental care only by symptoms. Thirdly, most operating time was fully occupied with treating symptomatic patients. Pericoronitis occurred at any age from 15 years onward. My oldest patient was 97 years old. Over 25 years later, I still remember the recurrent pericoronal abscesses, the trauma to both of us inflicted by the inevitable removal, and the post-operative morbidity. Of course this is anecdotal, but it is a very common experience. The older patients generally had greater post-operative morbidity. Anyone who has removed more than a few hundred third molars can attest to that. Not surprisingly, the majority of third molars we removed presented with pericoronitis. This is in keeping with the almost 60 per cent inflammatory reasons for removal identified by Howe in a British study and quoted by Stephens *et al*. Conversely, in North America, and I suspect in more recent times in Britain, pericoronitis is a less frequent occurrence because more third molars are removed at an optimum age before they become infected. Periapical disease is similarly less common because fewer non-vital teeth go untreated.

If the conservative approach proposed by Stephens *et al* is followed, I predict a sharp increase in the incidence of pericoronitis, an increase in the age at which third molars are removed, and the concomitant increase in post-operative mor-

bidity. Presumably, to be consistent, we should also leave non-vital teeth untreated, since it is well recognized that the majority do not cause symptoms. Alternatively, the cost-benefit analysis undertaken by the NIH Consensus Development Conference,² and that discussed by MacGregor³ would seem to be still reasonable.

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Colin Price, BDS, FDSRCS, MDS, FRCD(C)
Professor,
Department of Oral Medical and Surgical Sciences
Faculty of Dentistry
University of British Columbia

Reader believes article has 'significant shortcomings'

It is my opinion that the recent article regarding removal of third molars (March 1989 Vol. 55 No. 3) has several significant shortcomings that leaves a potential for a great deal of unnecessary pain and suffering on the part of patients.

To wit:

- 1) It is extremely disappointing to consider that no oral and maxillofacial surgery opinion about articles for review was sought, even though one of these individuals has had close contact with me in our teaching environment for ten years.
- 2) The article does not even consider the complications of third molar surgery in relation to patient age factor, which does increase risks of infection, permanent neuropathy and adjacent tooth injury.
- 3) The article does not include a review of osseous contour involved with early and late removal of third molars.
- 4) It does not consider that the average age for pericoronitis is when the surgery is far more difficult and carries increased risk of complications.
- 5) It leads one to believe most recommendations for removal of third molars are based on prevention of cysts, neoplasm and/or crowding of teeth, which no self-respecting oral surgeon would begin to suggest in this day and age.

Clearly, none of these three individuals are involved with the actual surgical removal of third molars. Their review and conclusions have little impact on their lives because the patients where

problems do occur, well, they must go elsewhere.

Unfortunately, my job of helping people who are having trouble with third molars is made more difficult by superficial articles which encourage dentists to delay surgery until a time when I wish the authors could do the surgery rather than me.

Dr. Scott Shafer,
Oral and Maxillofacial Surgeon,
Waterloo, Ontario.
Clinical Lecturer,
University of Western Ontario.

Re: The Unerrupted or Impacted Third Molar — March 1989, Vol. 55, No. 3

We request that you publish this letter to correct an error and an omission in our paper.

The error was recorded in our original draft when describing the results of a study by Stanley *et al*. (our reference 65), on the "Pathological sequelae of 'neglected' impacted third molars." The authors examined 11,598 panoramic films which revealed 3,702 impacted teeth, not 23,702 as shown in the article. The authors' conclusions were reported correctly. At the time of preparation of the paper, only the abstract of the study was available but the article has since been published — Stanley *et al*, *J. Oral Pathol.* 17:113-117, 1988.

The omission occurred on p. 205 with respect to the prevalence of dysesthesia. The two percent figure should have a reference number (our reference 12, Bramley). There is a wide range in the literature (less than 1 per cent to more than 4 per cent), so we elected to use the percentage reported as an average.

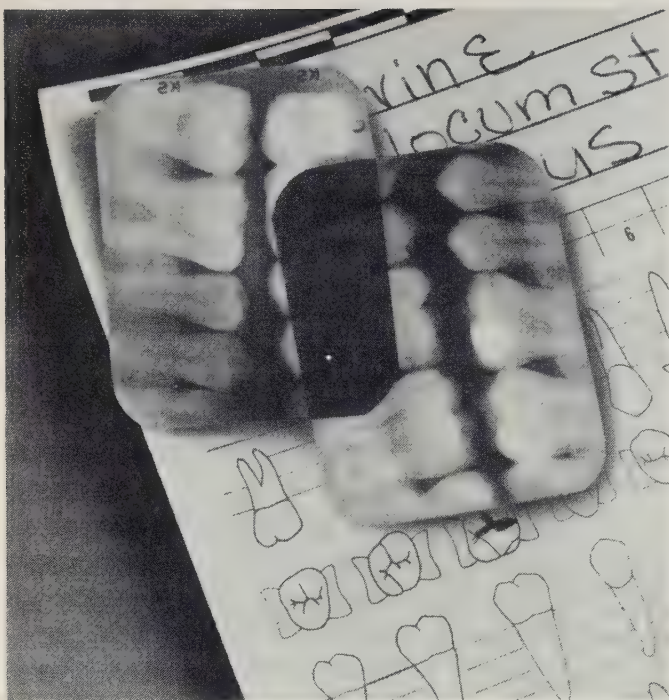
R.G. Stephens, S.L. Kogon and J.A. Reid
Faculty of Dentistry,
University of Western Ontario,
London, Ontario.

Article is "refreshing"

It was very refreshing to read the article: "The Unerrupted or impacted third molar: A critical appraisal of its pathologic potential," in the Journal of March, 1989, Vol. 55, No. 3.

This article confirms what I have observed clinically over the past 25 years that third molars do not routinely have to be removed. I agree with the authors that these teeth should only be removed when "there is a defined pathologic indication."

Mark Lazare, BSc, DDS,
Pointe Claire, Quebec.



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The Dental Laboratory and You

New System Ensures Superior Resin/Metal Bond

More and more clinicians are recommending the use of acrylic as an integral part of procedures involving Implants, Maryland Bridges, Bite Restorer/Occlusal Retainers or even the cementing of Willi Glas or Dicor Crowns. Yet, despite the many excellent reasons for employing resin in these instances, the problem of acceptable retention to metal has remained.

The Metal/Resin Bond — A History

Previously, the link between resin and metal has been accomplished through either mechanical retention or chemical adhesion. Unfortunately, both of these methods have imposed serious restrictions on technician and dentist alike.

Mechanical retention often leaves up to a 20 μm marginal gap between the resin and metal, allowing leakage and bacterial uptake. The result: odour and eventually, acrylic "pop-off." By its very nature, mechanical retention also severely limits the esthetic possibilities for any restoration.

Chemical adhesion, while avoiding some of the problems of mechanical retention, has its own drawbacks. Up until this point, the most popular methods of chemical adhesion were the acid-etch technique limited to certain non-precious metals or the application of a ceramic intermediate layer involving both ceramo-metal fusion and some type of organic glue system. Unfortunately, this is also dependant on the metal used

and tends to show unsatisfactory marginal gaps over time.

"Silicoater" technique eliminates these problems

Now, a new method is available through the dental laboratory. A method with a proven adhesive link between metal and resin, that can be applied to all precious and non-precious alloys alike and eliminates the need for mechanical retention; without requiring any change in your technique.

The metal surface of the restoration is coated molecule by molecule with a thin (approximately 100 μm) layer of Silicon Dioxide compound combined with a polymer group, using a special flame pyrolytic procedure. The Silicon Dioxide bonds with the metal, the polymer group with the resin. This combination results in a glasslike coating that acts as a molecular adhesion medium. The acrylic material can then be processed directly to this layer, creating a seamless joint without marginal gaps.

The insignificant thickness and elasticity of this layer reduces and redistributes the stress between resin and metal, stress that is unavoidable in the moist oral environment, particularly considering the thermal changes that take place. This eliminates the "shifting" that can result in a loss of the molecular adaption necessary for adhesion. This is also the reason the method works with both precious and non-precious metals.



H.J. Maier, RDT

Research proves superior bond strength

In recent research conducted at the University of Geneva, Switzerland, shear strength tests showed the Silicoater method provided significantly higher bond strength than other chemical adhesion methods. In fact, the adhesive strength was so strong that the tests showed destruction of the alloy itself before the resin broke away.

Complete application flexibility

With the Silicoater technique, you are no longer restricted to certain non-precious metals with Maryland Bridges. In fact, you can now use any metal you choose with twice the retention of the standard etch/cement bond. Removing the need for mechanical retention allows your laboratory technician to create optimal esthetic results with fixed implant and acrylic veneer bridge cases. Even very thin layers of acrylic, as employed in Bite Restorer/Occlusal Retainer prostheses, will adhere to the metal, making the restoration last far longer.

Coating fractured porcelain allows a restoration to be repaired with an excellent bond to underlying metal. The process is even recommended for a superior bond with Willi Glas and Dicor Crowns.

Ask your laboratory about the Silicoater process, you'll be glad you did. Δ

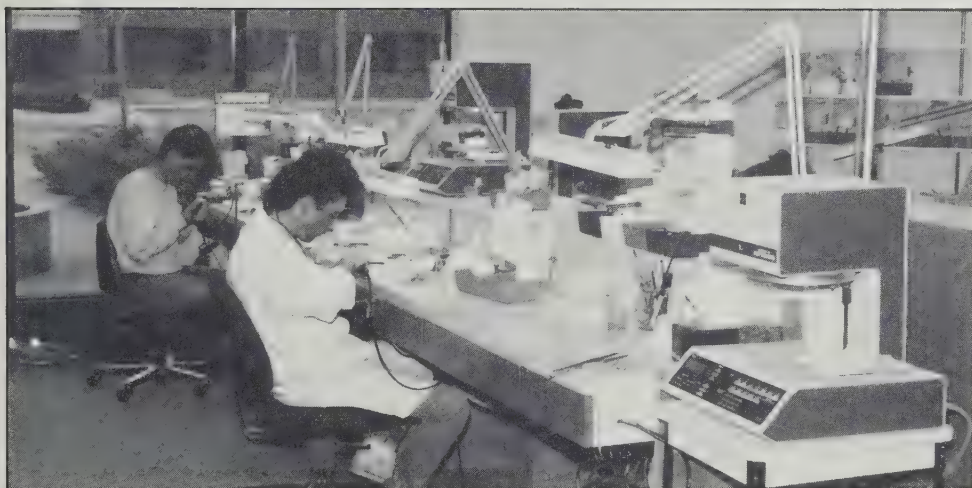
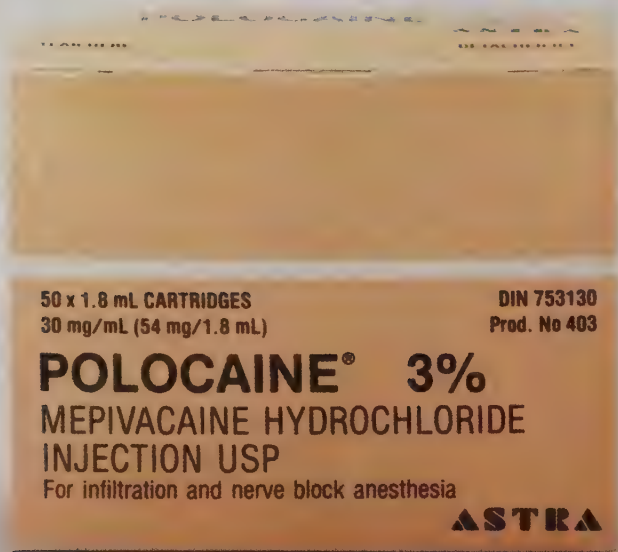


Illustration courtesy of Classic Dental Laboratories, Nepean, Ontario, Eastern Affiliate of the Aurum Group.

(The Journal thanks Mr. H.J. (Hyo) Maier, RDT, President of Aurum Ceramics/Classic Dental Laboratories Ltd., for the presentation of this material.)

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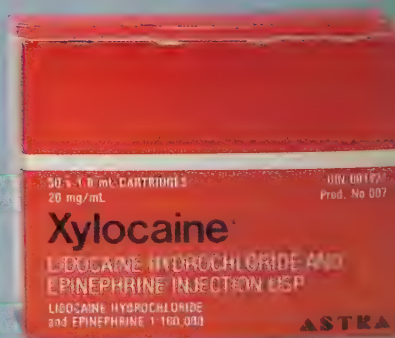


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The Dentist and the Bereaved Co-Worker*

Mary E. Toombs, BScN, MEd.,
Winnipeg, Manitoba

When a co-worker suffers a bereavement our attention is caught in three directions: our own feelings, continued functioning of our office, and concern for the bereaved. For convenience we will assume the bereaved is a woman, though the discussion applies equally to men.

1. Our own feelings

We may hold back from expressing our sadness for what has happened, in case she weeps, which makes us uncomfortable in a professional situation. Or we rationalize that grief is very personal and we don't want to intrude. But dying, and grieving for the dead, are not just a private affair. "We are all on the same bus." The poet, John Donne, put it more elegantly:

Any man's death diminishes me,
because I am involved in Mankind;
And therefore never send to know for
whom the bell tolls; It tolls for thee.

Private grief does spring out of the unique history of shared lives, but here we have a person in pain, and pain is part of our human condition.

We are afraid of saying or doing the wrong thing. I once heard a drama director say to a restless actor: "Don't just DO something. STAND there!" In an awkward situation we want to DO something, anything — but what? We can't quite believe that the best thing to do, especially in the early stages is "STAND there." Grieving persons feel so alone, that it is gratifying, even life-saving, to know that someone is 'just there'. A father who had lost his daughter in an accident was asked "what can we do or say?" His response: "Nothing." Nothing would change the situation, or take away the despair. By just 'being there' in the face of this sorrow, we are sharing our strength with the bereaved.



Mary E. Toombs, BScN, MEd., Winnipeg, Manitoba.

We are afraid, since another's death brings us closer to the idea of our own and that is frightening. We tend to think that loss, illness, and death happen to other people, and we keep our distance out of fear of contagion. Even though "there is no discharge from that obligation and that dark battle" (Ecclesiastes), denial still springs eternal in the human heart.

2. Implications for the smooth functioning of our office

Our staff member can be assured that her job is secure, though we will need a temporary replacement; that she can take the time she needs for the funeral arrangements, and a few days afterwards. When she is ready to come back, half time might be best until she has regained her energy. Bereavement itself can be draining, to say nothing of the physical upsets which often accompany it. Other days off may be required by the social or family situation: If her husband has died, does she now have sole responsibility for the children? What arrangements has she been able to make? If a

child has died, are there other children for whom she now feels more fearful and concerned? Extra time may be needed for appointments, interviews with school personnel, lawyers, etc.

3. Concern for the bereaved

This can be expressed on the personal level by all staff, others in the same building, even patients who enquire. What help they offer will depend on the relationship they already have had with this person, or with the deceased. Sometimes outsiders can be more supportive than the family members who are also grieving. It can be helpful to take the friend out for a cup of coffee or a drive, just to get away for a bit, no conversation required. In any case, it is better to make a specific offer of help, rather than the open-ended "let me know if there's anything I can do."

When she returns the staff person should be welcomed back warmly. A professional woman who lost a grown son very suddenly, said the kindest thing her co-workers did was to come round to the house for a short visit before her first day back. It made it so much easier, "meeting them first in my home, before seeing them again in the professional setting." With the ice broken in that way, the person can move directly back into work routines. It can be therapeutic to return to a structured situation where work demands are met in the security of the familiar. The pain of loss is not lessened. It is only moved over a little so that life can go on — and as the old cliché suggests, it does just that — surprisingly.

Families, friends, and co-workers all have a sense of how totally the whole world has changed for the bereaved. However, those who are with her day by day, the co-workers, are the ones who are in a position to provide ongoing support when it is needed. Again this is not a 'doing for' but a 'being available to' our friend, standing by as she re-builds her own resources. As one assistant commented: "You can't dump on the patients

* First North American Serial Rights

when you feel down. You have to depend on the people you work with. After my mother died, they seemed to know, maybe by the look on my face, when I needed them for a minute, just to talk, or even take over, so I could get some coffee or be by myself for a few minutes."

As the days pass the bereaved person tries to be reconciled to her loss.

As she is adjusting, she may experience periods of rollercoaster dislocation in feelings and behaviour — she needs to know that this is normal. In a dental office she meets the public, and there will be continual reminders. If a child patient is near the age of the one who died, the wound might be opened again: Did this child deserve to survive more than hers? If a spouse has died and a couple comes in, sadness may be sharpened.

An attentive staff can assist with the adjustment by being sensitive to such moments of vulnerability. One woman spoke warmly of arriving at work on the first anniversary of her husband's death

to find one of her co-workers presenting her with a rose. His explanation: "I wanted to-day's date to have more than just sad memories for you." Any special day, Valentine's, birthdays, all will be a catch in the throat, so recognition of that will be helpful. A simple remark like "This will be a very different kind of Christmas for you" can be a door-opener, giving the person permission to express and thereby validate her feelings. Reliving memories can enrich and ease the present moment. The nurse who had lost her son said her co-workers were marvelous — they let her talk about him whenever she needed to, even if she repeated herself — again — and again.

When is it over? It is different for everyone, depending on one's own personality, coping skills already learned, circumstances of the loss, the relationship which existed with the person who has died and the presence of support systems such as that offered by family and co-workers. Time is needed to re-integrate the scattered pieces of one's

life. Time is needed to deal with feelings, such as unspoken anger at being deserted, or guilt, often present after the death of a child. One widow reported that the painful periods gradually became shorter, and less frequent, but when they happened, they hurt just as much as they had in the beginning.

If, after several months, a person is still having problems with crying, depression, or persistent physical symptoms which interfere with work, it would be appropriate to suggest counselling. There are therapists and groups available to help the bereaved. A knowledgeable co-worker will be in a good position to offer suggestions. Referrals could be made for: griefwork; for a child's school difficulties following the loss; for relationship problems (some marriages do not survive the death of a child); or for medical reasons. *However the pattern of bereavement falls into place, it is important to remember that grief is not a feeling, but a process, and therefore can only be eased as it unfolds over time.* △



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“All Implants Succeed — All Implants Fail”

Part Two

P. Ralph Crawford, DMD

It was the original intent of the Journal, within a two-issue feature on implants, to describe and compare the differences between the various available implant systems. After listening to numerous clinicians at several implant symposia and “gleaning” the literature, the Journal’s final opinion is “All Implants Succeed — All Implants Fail.” The success or failure does not depend upon the system alone. Besides, comparison becomes almost impossible. There are now more than 30 implant systems available in the United States.

Implant Regulation

In Canada, Health and Welfare’s Health Protection Branch has responsibility for the regulatory status of all dental implants. The latest listing, (see opposite page) outlines implants having either notice of Compliance or Clinical Trial Status. If an implant device is not on the current list it is the Journal’s understanding that the implant is not accepted for sale. Notice of compliance authorizes the unrestricted sale of device, whereas a Clinical Trial Status designation constitutes permission to sell the device to designated clinical investigators **only**.

The Journal questioned officials at Health Protection Branch regarding the availability and sale of devices which either were not on the list at all, or else should be made available only to “designated clinical investigators.” The answers from the officials indicated frustration. Frustration with how easy it is for dentists to bring unauthorized devices across the border via mail-order houses; and frustration with manufacturers who are not really adhering to the spirit of

“designated clinical investigation.” One official from the Premarket Review Section told the Journal, “competition among implant sales people is very aggressive. Dentists can help us and themselves by using devices which are known to have the proper authorization.”

Dentists with concern may address their inquiries to the Premarket Review Section, Premarket Division, Health Protection Branch, Health and Welfare Canada, Sir Frederick G. Banting Research Centre, Ross Avenue, Tunney’s Pasture, Ottawa, Ontario, K1A 0L2, OR CALL (613) 954-0386.

Implant Insurance

The Journal was also curious regarding the malpractice coverage of a dentist using implant devices that did not have a Notice of Compliance status from the Health Protection Branch. CDSPI must have had some concern because last fall when they mailed their invoices to policy holders they included a cautionary note. . .

LOSS PROTECTION
All Dentists Are Urged
To Read Material Released By
The CDA Through Mailings And
In The CDA Journal On The
Subject of *Implants*.

The Journal spoke to an official at CDSPI and was informed that the carrier of malpractice insurance, Guardian Insurance Company, will (at this particular time) continue to cover any dentist involved in an implant action. However, Guardian has indicated it would be easier to defend if the dentist was using a Health and Welfare approved system.

Economics

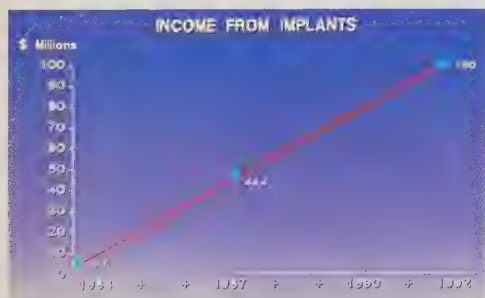
There is little doubt implant dentistry is here to stay and for patients it is a factor that will certainly add to their quality of life. But there is also little doubt that for manufacturers, suppliers **and** dentists, there is money in implants that will add to **their** quality of life.

Figures are not available for Canada but if we study the statistics that are coming out of United States, and merely divide by ten, we have a fairly good estimate of the economics of implant dentistry. If readers are to believe an article in the October 1988 issue of Dental Economics, “Implants: Implications for General Dentists,” they will realize there are over 100 million partially or totally edentulous patients in the USA and any one of them could be a candidate for an implant. If the average cost of a root-form osseointegrated implant is about \$700 CDN, then 100 million possible patients translates into staggering amounts reaching as high as \$70 billion!!

Of course it is ludicrous to talk in those terms, but just look at the trend in the United States. In 1985, there were 20,000 implant patients; in 1986, 30,000; 1987, 40,000. By the year 1992 it is predicted that over 300,000 implant units will be placed. Biomedical Business International, a California research firm, reports that the implant market has grown from \$6.7 million in 1984 to \$44 million in 1987. They expect the market to reach over \$100 million in 1992.

Dr. Wayne Halstrom, a Vancouver family practice dentist who has been involved with third party payment negotiations for more than 20 years, spoke of

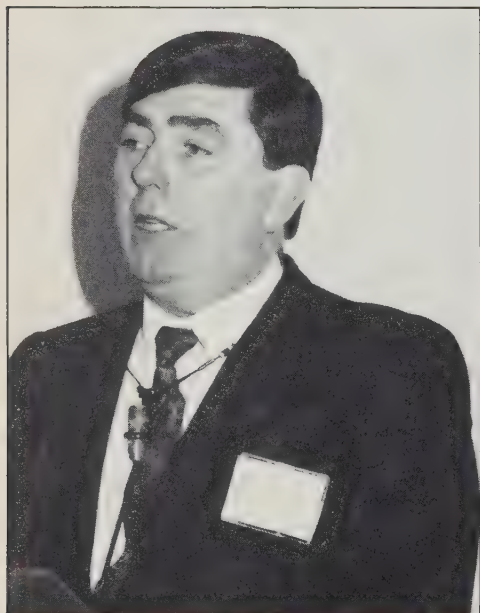
the "good news and the bad news" as it related to implants and economics. He referred to the economic predictions of Biomedical Business International (preceding paragraph) and the \$100 million market predicted for 1992. He indicated that the income from implants could well balance the loss of income expe-



rienced from so many caries-free children and young adults.

"Let us consider the true benefits of implantology," said Dr. Halstrom. "For the dentist willing to educate himself in the discipline, and capable of producing the results, this field is the wave of the future."

However, he had words of caution about implants, particularly in the areas of insurance and responsibility. "To reduce misunderstandings as a result of unawareness, dentists involved in the field must ensure their patients are maximally informed as to the expectations of the procedure. The prospect for multi-defendant actions, growing out of informed consent disputes and competency questions, raises the possibility of



Dr. Wayne Halström addresses the Vancouver Symposium on the Economic Impact of Implant Dentistry.

higher than customary settlements. An ounce of prevention is worth a ton of cure! In no other endeavour do we have as complex an interprofessional relationship. Complicating the ordinary effects of failure we have an unusual professional responsibility cross-over."

How much training?

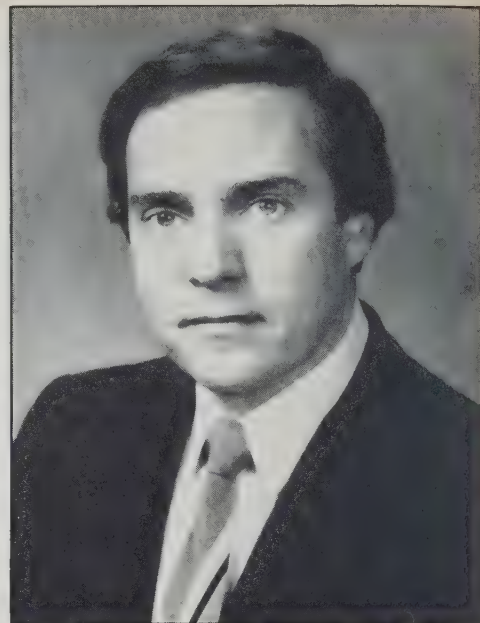
It is impossible now to pick up any dental journal/magazine and not see an advertisement for implants — either to buy one or else to attend a course. The *AGD "Impact"* of October 1988 reported that \$13 million US is spent annually to market implants. That is more \$1,000 Cdn. for every dentist in Canada!

The same 1988 October issue of *AGD Impact* deals with the training of dentists in the implant area. How much training is actually required to become competent in either placing implants within bone or building the superstructure above? No one really knows the answer. When the Bränemark system was first introduced into North America it was the intent to maintain quality by only limiting the procedure to oral surgeons and prosthodontists. Time and competition has altered those lofty goals. Now every company offers courses of varying degrees to anyone who registers and has the money.



AGD Impact reports there are four universities in the United States offering advanced programs in implants; Brookdale Hospital, New York University, Pittsburgh University, Harvard University and Loma Linda University. Students learn the entire procedure involved in implant dentistry and become acquainted with several types of implants. Quotes *IMPACT*, "By far, the most popular courses are given by manufacturers, who teach procedures associated with their particular brand. As it stands today, any dentist could literally walk into a weekend course offered by a manufacturer and begin placing implants the following Monday."

Defending the weekend system is Dr. Gerald Niznick, a native of Winnipeg

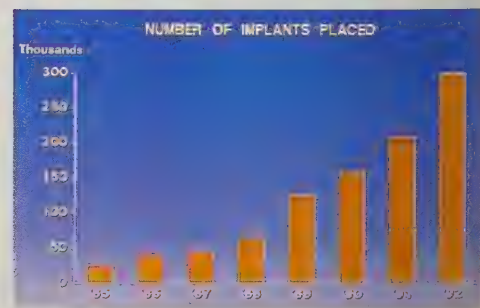


Gerald A. Niznick, DMD, MSD. Founder and President, Core-Vent Corporation, Encino, California.

and a 1967 graduate of the Faculty of Dentistry at the University of Manitoba. Niznick developed the Core-Vent System, which, according to Biomedical Business International, has 50 per cent of all root form implant sales in North America. Dr. Niznick says, "Some guys could train for a month and screw it up, and some guys could watch a videotape and do it. The success rate depends on the dentist's care. Can they take a two-day course? Hell, they've done it."

However, Dr. Niznick is more temperate in a statement found in the October 1988 *Dental Economics*; "The surgical skills needed to insert cylindrical implants are no more demanding than those required to remove a fractured root. Success will depend more on proper diagnosis and treatment planning than on the mechanics of preparing the bone site, especially if one selects a user-friendly system. Regardless of who is placing the implants, overall treatment success usually will depend on the prosthetic versatility of a system and the skill of the restorative dentist."

Dr. Richard Gauche, President of the American Academy of Implant Dentistry,



is quite cautious, "For the novice who wants to get involved in the field of implant dentistry the courses could be as harmful as they are beneficial. The field is much larger than just putting something in or on the bone. You need to know which implant to use, where to use it, how to use it, what to do if it fails. You can't teach all this in a two-day course."

Report of a case

One of the most interesting aspects encountered by the Journal as it "skimmed" the field of implants was observed at the Mayo Clinic in Rochester Minnesota. A Canadian patient, age 58, who had been edentulous for more than 25 years sought treatment from two eminent oral and maxillofacial surgeons, Drs. Daniel Tolman and Eugene Keller.

The patient was almost in a state of desperation! After seven sets of dentures which were constructed just to keep up to the rapid resorption, there didn't seem to be anywhere else to go. She considered herself to be a "good denture wearer" but in contemplating the future, was told there wasn't much that could be done for her in her home town, she took the advice of her dentist and went to Mayo.

The Mayo oral and maxillofacial surgeons, Tolman and Keller, have had considerable experience in the treatment of severely resorbed ridges by grafting autogenous iliac crest and utilizing immediate placed osseointegrated implants. An outline of their technique may be found in *The International Journal of Oral and Maxillofacial Implants*, Vol. 2: 155-163, 1987.

Drs. Tolman and Keller were kind enough to permit the Journal to be present throughout the four-hour operation. While Dr. Keller harvested the bone from the patient's left hip Dr. Tolman prepared the maxillary bearing area. Dr. Tolman had determined the size and shape of graft required by using tin foil to give an impression of the flapped residual maxillary arch. He then carefully carved a horseshoe-shaped section from the approximately 4 cm x 8 cm wedge of iliac bone. The side of the graft approximating the maxillary ridge was shaved of its cortical plate. All residual cancellous bone not used for the actual graft was set aside. They were to be used later to pack around the edges of the graft.

Six Bränemark implants, varying from 13 mm to 17 mm were placed to hold the graft into place. Great care and skill had to be exercised to ensure the ends of the implants rested in residual maxillary cortical bone.

Despite the severity of resorption of the mandible, the surgeons determined there was enough bone remaining to proceed without grafting. Although the patient possessed very little bone height of the mandible there was ample width. Five Bränemark 7 mm implants were placed in the symphysis area.

It was most evident throughout the entire operation that Drs. Keller and Tolman had been exceedingly meticulous in the planning and assessment of the procedures. Excellent quality radiographs — pantographs, a lateral headplate and occlusal films — gave much-needed information on bone configuration and quality. Mounted study cases on a semi-adjustable articulator guided the placement of the implants in relation to the future superstructure. Nothing seemed to have been overlooked!

The patient remained in hospital for five days following the operation. The first days saw slight to moderate swelling and discoloration of the facial tissue and moderate pain. What bothered the patient most was a sore hip! The patient will return for a post-operation examination before the implants are uncovered in seven to nine months. It is planned to

place a fixed full prosthesis on the mandible and a removable maxillary denture retained with either magnets or a bar-clip retainer.

Drs. Keller and Tolman, and the patient, all appeared optimistic about the eventual outcome. The surgeons indicated that all they had hoped for, and more, was achieved with this particular case. The patient, despite post-op discomfort, was delighted. She remarked: "For the first time in years I can actually feel I have an upper ridge and there is even a vault to my palate!"

The surgeons are confident that the eventual outcome will be successful.

The patient, who has to travel almost 1,000 miles each way between Canada and Rochester, Minnesota, has no dental insurance and to date has had no indication the home province will pay very much for the elective operations and prostheses, outside of Canada (total cost is approximately \$50,000 Canadian). The spouse is retired on a moderate pension, but between the two of them they felt the quality of life afforded by the "miracle" of implants will be worth more than any material item they might wish to buy. Δ



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CASE REPORT

Reconstruction of the resected mandible using titanium implants in a free vascularized graft

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A case is reported where the diagnosis, treatment, reconstruction and rehabilitation of an oral cancer patient was carried out by a multidisciplinary team to achieve the best result. An oral pathologist, otolaryngologist, plastic surgeon, oncologist, prosthodontist, and an oral and maxillo-facial surgeon collaborated to treat a patient and restore form and function. After diagnosis and pre-operative chemotherapy, the patient's right mandible and associated tissue was resected and immediately replaced with a free vascularized graft formed from the hip. One year after post-surgical chemotherapy, titanium implants were placed in the grafted bone and a dental bridge constructed on the implants.

The patient was a 26-year-old white male professional who was well until he developed a swelling and pain on chewing in the region of his lower right first molar. He saw a dentist who made radiographs and noted a radiolucency in the region of the apex of the roots of tooth 46 (Fig. 1). Antibiotics were prescribed and endodontic treatment initiated, however the patient's symptoms persisted. He

was referred to an endodontist, then to an oral pathologist.

An exophytic lesion was now present on the lingual of the right mandible. It was biopsied and reported as a sarcoma, although a specific tumour type could not be identified. He was immediately referred to the Oncology Service. On admission examination, an irregular, firm, slightly tender 2 × 4 cm grey mass was identified on the lingual aspect of the right mandible (Fig. 2, 3). An enlarged right deep cervical node was palpable. CT scanning revealed a large soft tissue mass in the right neck with some destruction of

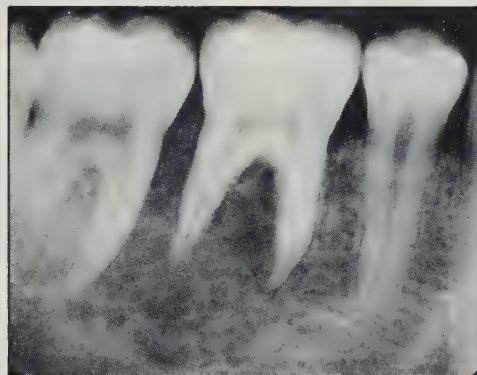


Fig. 1: Periapical radiograph made at initial dental consult. Note the diffuse irregular radiolucency and loss of lamina dura around the roots of 46 with radicular resorption.

the right mandible. A gallium total skeletal scan showed increased metabolic activity from the right angle to the mid-line of the mandible but no evidence of metastases elsewhere.

Combined Oncologic and Reconstructive Therapy

A repeat biopsy of the exophytic mass confirmed the diagnosis of sarcoma, but failed to identify the tumour type although osteosarcoma or chondrosarcoma were suggested. Following consultations, a right hemi-mandibulectomy with simultaneous iliac crest reconstruction was planned. Also the patient was immediately started on pre- and post-operative chemotherapy consisting of appropriate doses of Methotrexate, Oncovin, Adriamycin, and Decadron.

Ten days later, a general anesthetic was administered and the oncologic surgery team removed a section of the right mandible from the distal of the lower right central incisor to the anterior border of the coronoid process. A modified neck dissection was also performed and lymph nodes were removed for immediate frozen section.

At the same time, the plastic surgery team was preparing a free vascularized graft from the iliac crest of the right hip

Key words: implant, dental, bone graft, microvascular



Fig. 2: Exophytic lesion on the lingual of 46 at the time of hospital admission.

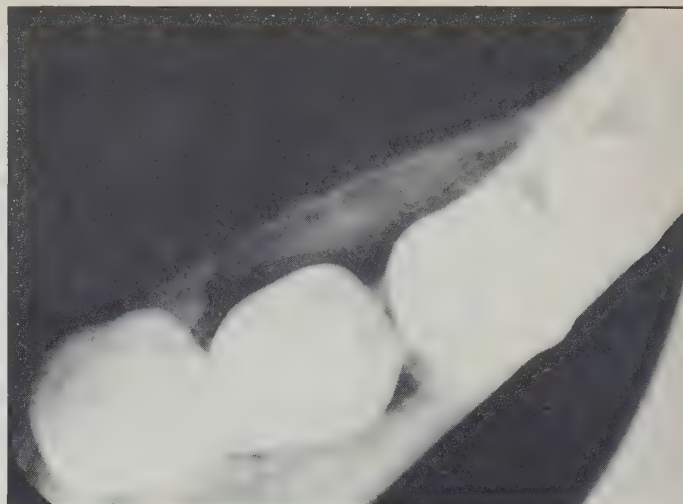


Fig. 3: Occlusal radiograph showing radiolucent lesion lingual to 46 with expansion of the mandible and thinning of the cortex.

to reconstruct the right hemi-mandible (Fig. 4, 5).^{1,2,3} The deep circumflex iliac artery and vein were identified and preserved to anastomose to the superior thyroid vessels. The excised right mandibular specimen was measured and used as a pattern. The anterior iliac spine became the angle of the mandible and the iliac crest formed the inferior mandibular margin. Sections of the outer cortex and anterior superior spine were removed to create the best contour and angle for the new hemi-mandible. The graft was secured to the mandibular midline and ascending ramus with interosseous wire loops, the microvascular anastomoses were performed, and the tissues closed. The left maxillary and mandibular teeth

were wired together for one month.

The final histopathological diagnosis was chondrosarcoma which has a more favorable prognosis than the more frequently occurring osteosarcoma. The patient then received five more chemotherapy sessions which were accompanied with the usual nausea, edema, and hair loss. Despite this debilitation, he remained positive and optimistic.

Interim Dental Rehabilitation

The patient was again seen in the dental service for prosthodontic treatment and implant assessment. At this time, he had considerable facial edema and trismus and could only open 12 mm between the incisors. Despite this, he had good oral

hygiene, minimal gingivitis, and had remained caries free during the previous months of compromised oral function. The upper right third molar (18) was now impacting on the mandibular mucosa. This tooth was removed and impressions were made to construct an interim unilateral acrylic partial denture to minimise extrusion of the now unopposed right maxillary teeth. This was inserted with a soft liner. Topical fluoride was applied and oral hygiene techniques for the teeth and prosthesis were designed.

The patient returned for medical and dental checkups every three months. At each of these appointments, the liner was adjusted or replaced as necessary, fluoride was applied and oral hygiene strate-



Fig. 4: Pre-surgical panoramic radiograph. Note the shortened distal root of 46 and surrounding radiolucency.

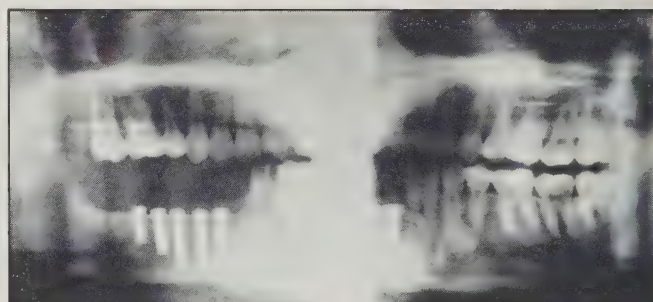


Fig. 6: One year post-surgery radiograph. Five Bränemark titanium dental implants in the microvascular iliac crest graft to the mandible. The mucosa is closed and the implants nonloaded for six months to allow osseointegration to occur.

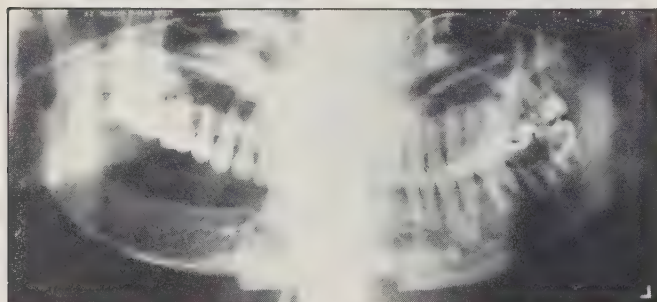


Fig. 5: Two week post-surgical panoramic radiograph of the microvascular iliac crest graft replacing the right hemi-mandible. The inter-osseous wire loops provide initial stabilization. Comparing left to right, note that the graft is smaller, less calcified, and lacks a cortex.



Fig. 7: Radiograph of the five accurately attached transmucosal titanium abutments and dental bridge screwed on top of the five implants.

gies modified as necessary. The inter-incisor opening gradually increased to 25 mm.

Definitive Maxillo-facial Rehabilitation

One year after chemotherapy, the patient had a good recovery and prognosis and the prosthodontist designed a second prosthesis to replace the surgically removed right jaw tissue and teeth. Brånemark implants* into the hip graft were recommended to support and secure this maxillo-facial prosthesis.

The oral surgeon evaluated the hip graft for implant placement. The graft site was classified as ridge shape "c" with bone quality "4".⁴ The intra-oral access was limited but considered adequate. The opposing teeth and the existing interim partial denture were used as guides to the best implant positions.

The patient received a general anesthetic and the oral surgery team placed five fixtures in the grafted right mandible (Fig. 6). A standard vestibular incision was made but access was complicated by 6 mm thick tightly bound soft tissue and limited oral opening. Two of the stainless steel wires were removed from the anterior of the graft to allow fixture placement. Sites were prepared from anterior to posterior for three 18 mm, one 13 mm and one 10 mm fixture. The bone marrow was very spongy and homogeneous in consistency and the cortex was extremely thin, a condition which this surgeon has frequently found in free vascular bone grafts. The fixture sites were enlarged to full size but not threaded. Minimal counter-sinking was done in order to preserve the thin cortex of bone.

Fixtures were inserted as self-threading screws without any final hand-tightening. The surgical site was closed in the usual manner. One week later, the area was observed to be healing normally, sutures were removed and interim partial denture was re-inserted after extra relief and application of new soft lining material.

The five implants were left unloaded in the jaw for six months to allow living bone to grow to the titanium surface and create "osseointegration" before the second implant surgery was performed. Under local anesthetic, a small flap was raised to allow the smooth surface titanium abutments to be screwed on top of the bone embedded implants. The clinical signs of osseointegration and correct abutment connection were confirmed by absence of symptoms, palpation, percussion and dental radiographs.

Definitive prosthodontic treatment now started. Two weeks after the Stage II abutment surgery, a final impression was made. Transfer copings were accurately screwed on the abutments and Duralay acrylic resin was applied to secure their orientation. An elastic impression material was used in a modified stock plastic tray to pick up the transfer copings and the soft tissue contour. The master casts were mounted on a semi-adjustable articulator and acrylic resin denture teeth were positioned to occlude with the opposing dentition. A silicone index was made to preserve this tooth set-up. A plastic and wax pattern was developed in order to cast a metal framework in palladium-silver alloy. After casting and finishing of the frame, the acrylic teeth were repositioned and the waxed up frame was checked in the mouth (Fig. 7). The accurate and passive fit of the frame and correct tooth selection were verified and accepted by the patient. The pros-

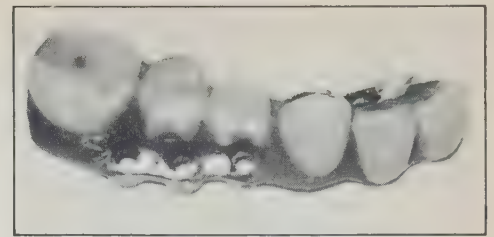


Fig. 8: The dental bridge consisting of a rigid frame with five machined connections for gold alloy screws. The missing bone and teeth are replaced with dental acrylic.

thesis was processed with a conventional heat cured acrylic resin technique (Fig. 8).

At the insertion appointment, the patient was extremely grateful and voiced the opinion that he now felt as if he was "back together" for the first time in two years (Fig. 9, 10). No adjustments have been necessary in the year following insertion of this maxillo-facial prosthesis.

Discussion

The patient who has a discontinuous mandible presents a considerable disability which defies competent prosthodontic rehabilitation. The remaining mandibular segment often has a marked medial displacement and the patient is unable to use a consistent occlusal position. This can be further complicated by loss of tongue tissue, contracture and reduced opening, and loss of the adjacent or opposing dentition. In these situations, the prosthodontic replacement is marginally retentive, non-functional and only slightly cosmetic. Patients are cured of their cancer but left with a permanent oral incapacity. Reconstructive surgery at a later date is compromised by the contracture, scarring and sometimes minimal remaining soft tissue. If tissues have been irradiated, the potential for healing is reduced.



Fig. 9: Dental bridge in situ. Note the restoration of the secure and intact mandibular contour and dental occlusion. This can only be achieved by using titanium implants in the bone graft. Inconspicuous access has been designed for the patient's oral hygiene.

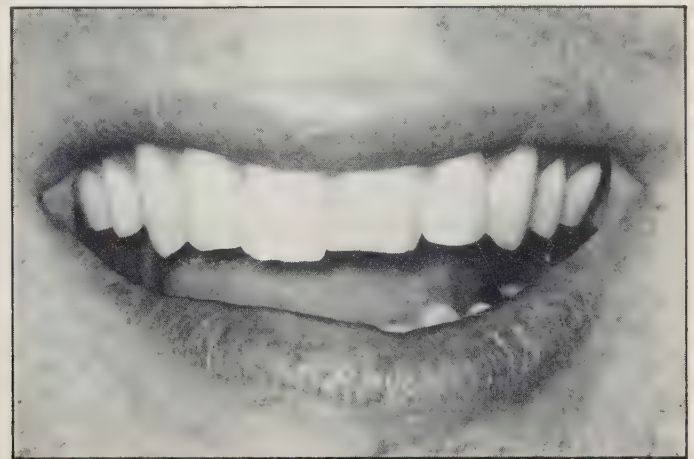


Fig. 10: Cosmetic result. The facial tissues are adequately supported by the underlining bone graft and implant retained maxillo-facial prosthesis.

* Nobelpharma Canada Inc., Toronto, Ontario

The increased recent popularity and success of microvascular surgery has allowed for the immediate replacement of a viable bony base and soft tissue covering for some of the removed tissue. The availability of the immediate surgical site and the excised specimen allows the reconstructive surgical team to create a much more realistic contour of the hip graft and then place it in an optimal location to simulate the mandible. The patient's postoperative recovery is assisted since the mandible is maintained as an intact unit. This avoids the contracture and altered function that develops if the facial tissues heal with a hemi-mandible postsurgically. The maintenance of this relatively normal facial appearance is of considerable benefit to the patient's psychological adjustment and sense of well being.

Other papers have reported the use of Bränemark implants in bone grafts^{5,6,7} or the use of other implants in microvascular free grafts.^{8,9} This paper has reported the use of the most investigated and successful implant system in a microvascular iliac crest bone graft to restore a surgically excised hemi-mandible.

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BOARD OF GOVERNORS NOTICE OF MEETING

The Annual Meeting of the Board of Governors of the Canadian Dental Association will be held August 25, 26, 1989 (Friday and Saturday respectively) at the Four Seasons Hotel, Vancouver, commencing at 9:00 a.m. on August 25.

It is brought to your attention that meetings of the Board of Governors are open to all members of the Association.

The Board is composed of twenty-eight governors with voting privileges and a Chairman. Governors represent members across Canada on a 1 to 500 ratio. The Canadian Forces Dental Services, Student members and affiliate members from Québec are represented by one member each.

In addition, there are two non-voting members, namely, the senior dental representative of the Department of National Health and Welfare and the Department of Veterans Affairs.

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POLOCAINE® 3%
Mepivacaine Hydrochloride Injection USP
30 mg/mL

THERAPEUTIC CLASSIFICATION
Local Anesthetic for Infiltration and Nerve Block

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Mechanism of action: POLOCAINE (mepivacaine hydrochloride) stabilizes the neuronal membrane and prevents the initiation and transmission of nerve impulses, thereby effecting local anesthesia

Onset of action: The onset of action is rapid (30 to 120 seconds in the upper jaw; 1 to 4 minutes in the lower jaw) and POLOCAINE 3% without vasoconstrictor will ordinarily provide operating anesthesia of 20 minutes in the upper jaw and 40 minutes in the lower jaw.

Mepivacaine does not ordinarily produce irritation or tissue damage.

Pharmacokinetics and metabolism: Mepivacaine is rapidly metabolized with only a small percentage of the anesthetic (5 to 10 percent) being excreted unchanged in the urine. Mepivacaine, because of its simple structure, is not detoxified by the circulating plasma esterases. The liver is the principal site of metabolism, with over 50 percent of the administered dose being excreted into the bile as metabolites. Most of the metabolized mepivacaine is probably resorbed in the intestine and then excreted into the urine. Only a small percentage is found in the faeces. The principal route of excretion is via the kidney. Most of the anesthetic and its metabolites are eliminated within 30 hours. It has been shown that hydroxylation and N-demethylation, which are detoxification reactions, play important roles in the metabolism of the anesthetic. Three metabolites of mepivacaine have been identified from adult humans; two phenols, which are excreted almost exclusively as their glucuronide conjugates, and the N-demethylated compound 2', 6'-pipecoloxylidide.

INDICATIONS

POLOCAINE 3% (mepivacaine hydrochloride) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS

POLOCAINE 3% (mepivacaine hydrochloride) is contraindicated in patients with a known hypersensitivity to amide type local anesthetics.

WARNINGS

DENTAL PRACTITIONERS WHO EMPLOY LOCAL ANESTHETIC AGENTS SHOULD BE WELL VERSED IN DIAGNOSIS AND MANAGEMENT OF EMERGENCIES WHICH MAY ARISE FROM THEIR USE. RESUSCITATIVE EQUIPMENT, OXYGEN AND OTHER RESUSCITATIVE DRUGS SHOULD BE AVAILABLE FOR IMMEDIATE USE.

Reactions resulting in fatality have occurred on rare occasions with the use of local anesthetics, even in the absence of a history of hypersensitivity.

Local anesthetic procedures should be used with caution when there is inflammation and/or sepsis in the region of the proposed injection.

Usage in Children: Great care must be exercised in adhering to safe concentrations and dosages for pediatric administration. (See DOSAGE AND ADMINISTRATION).

PRECAUTIONS

The safety and effectiveness of local anesthetics depend upon proper dosage, correct technique, adequate precautions and readiness for emergencies.

INJECTIONS SHOULD ALWAYS BE MADE SLOWLY WITH ASPIRATION TO AVOID INTRAVASCULAR INJECTION AND, THEREFORE, SYSTEMIC REACTION TO THE LOCAL ANESTHETIC.

Changes such as excitation, disorientation, drowsiness, may be early indications of a high blood level of the drug and may occur following inadvertent intravascular administration or rapid absorption of mepivacaine.

The lowest dosage that results in effective anesthesia should be used to avoid high plasma levels and possible adverse effects. Injection of repeated doses of mepivacaine may cause significant increase in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slower metabolic degradation than normal.

Tolerance varies with the status of the patient. Debilitated or elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their weight and physical status. Mepivacaine should be used with caution in patients with a history of severe disturbances of cardiac rhythm or heart block.

POLOCAINE 3% (mepivacaine hydrochloride) should be used with caution in patients with known drug allergies and sensitivities. A thorough history of the patient's prior experience with mepivacaine or other local anesthetics as well as concomitant or recent drug use should be taken (see CONTRAINDICATIONS). Patients allergic to methylparaben or para-aminobenzoic acid derivatives (procaine, tetracaine, benzocaine, etc.) have not shown cross-sensitivity to agents of the amide type such as mepivacaine.

Since mepivacaine is metabolized in the liver and excreted by the kidneys, it should be used cautiously in patients with liver and renal disease.

Many drugs used during the conduct of anesthesia are considered potential triggering agents for familial malignant hyperthermia. It has been shown that the use of amide local anesthetics in malignant hyperthermia patients is safe. However, there is no guarantee that neural blockade will prevent the development of malignant hyperthermia during surgery. It is also difficult to predict the need for supplemental general anesthesia. Therefore a standard protocol for the management of the malignant hyperthermia should be available.

Drug Interaction: If sedatives are employed to reduce patient apprehension, use reduced doses, since local anesthetic agents, like sedatives, are central nervous system depressants which, if given in combination may have an additive effect. Young children should be given minimal doses of each agent.

Usage in Pregnancy: Safe use of mepivacaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

ADVERSE REACTIONS

Systemic adverse reactions involving the central nervous system and the cardiovascular system usually result from high plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection.

More common reactions

Central Nervous System: Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may occur followed by drowsiness.

Gastrointestinal: Nausea and vomiting

Less common reactions

Central Nervous System: More serious but less common reactions that reflect an overdosage of anesthetic are: convulsions, unconsciousness, and possibly respiratory arrest. Since excitement may be transient or absent, the first manifestations of adverse reactions may be drowsiness merging into unconsciousness and respiratory arrest.

Cardiovascular: Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, and even cardiac arrest.

Allergic: Allergic reactions are rare and may occur as a result of sensitivity to the local anesthetic. Reactions may be characterized by cutaneous lesions of delayed onset or urticaria, edema and manifestations of allergy. The reaction may be abrupt and severe and is usually not dose related. Detection of sensitivity by skin testing is of limited value. As with other local anesthetics, anaphylactic reactions to mepivacaine have rarely occurred.

Neurologic: The incidence of adverse neurological reactions directly caused by the use of local anesthetics is very low. Neurological reactions may be related to the total dose of the local anesthetic administered and are also dependent upon the particular drug used, the route of administration and the physical status of patient. Many of these effects may be related to local anesthetic techniques, with or without contribution from the drug.

OVERDOSAGE

Systemic toxicity to amide type local anesthetics is initially manifested as CNS excitation and may be followed by a slow onset of nervousness, dizziness, blurred vision and tremors followed by drowsiness, convulsions, unconsciousness and possibly respiratory arrest.

Toxic cardiovascular reactions to local anesthetics, which are usually depressant in nature, may occur rapidly and with little warning and can lead to peripheral vasodilation, hypotension, myocardial depression, bradycardia and possibly cardiac arrest.

Treatment of Systemic Reactions: Treatment of toxic manifestations consists of assuring and maintaining a patent airway and supporting ventilation (respiration) as required. This usually will be sufficient for the management of most reactions.

Should a convulsion persist despite ventilatory therapy, small increments of anticonvulsive agents should be given intravenously, such as benzodiazepine (e.g., diazepam) or ultra-short acting barbiturates (thiopental or thiomytal) or short-acting barbiturates (e.g., pentobarbital or secobarbital).

Cardiovascular depression may require circulatory assistance with intravenous fluids and/or vasopressors (e.g., ephedrine) as dictated by the clinical situation.

Allergic reactions should be managed by conventional means.

DOSAGE AND ADMINISTRATION

As with all local anesthetics, the dose varies and depends upon the area to be anesthetized, the vascularization of the tissues, individual tolerance and the technique of anesthesia. THE LOWEST DOSE NEEDED TO PROVIDE EFFECTIVE ANESTHESIA SHOULD BE ADMINISTERED. For specific techniques and dosages, procedures refer to standard dental manuals and textbooks.

Adults

RECOMMENDED DOSAGES FOR POLOCAINE 3% (30 mg/mL) IN THE AVERAGE, HEALTHY ADULT

	Infiltration	Block
Suggested dosage	1-2 mL	1.5 – 5 mL
Onset of action (approx)	2.5 min	4 min
Duration of action		
Pulp	15 min	90 min
Soft tissue	1-1.5 h	2.5 h

Each cartridge contains 1.8 mL of 3% solution or 54 mg of mepivacaine.

MAXIMUM DOSAGE:

Adults: It is recommended that the dose of POLOCAINE at any one time should not exceed 5-7 mg/kg body weight or 400 mg mepivacaine hydrochloride, 7 cartridges. However, the dose administered should be tailored to the individual patient and procedure, and the maximum dose here quoted should be used as a guide only.

Children: For children, the dose may have to be reduced commensurate with body weight.

The maximum pediatric dose should be carefully calculated and should not exceed 5 cartridges (27 mg of the 3% solution). The maximum pediatric dose should be calculated as:

Maximum Dose for Children =

Child's Weight (kg) _____ X Maximum Recommended Dose for Adults (400 mg)
70

When using POLOCAINE 3% for infiltration or regional block anesthesia, injection should always be made slowly and with frequent aspiration.

Any unused portion of a cartridge should be discarded.

Non medicinal ingredients:

Sodium chloride
Sodium hydroxide and/or hydrochloric acid to adjust pH 4.5-6.8
Water for Injection

AVAILABILITY

POLOCAINE 3% (mepivacaine hydrochloride) is available in plastic dental cartridges of 1.8 mL, packed 50 per box.

ASTRA

Astra Pharmaceuticals
Mississauga,
L4Y 9Z9

Current regulatory status of dental implants in Canada

Health and Welfare Canada's Health Protection Branch Premarket Review Section has reported the current regulatory status of dental implants (as of March 1, 1989) to this Journal.

The following manufacturers have provided data on safety and efficacy and have permission to sell their products in Canada.

Please note that the issuance of a Notice of Compliance authorizes the unrestricted general sale of the device, whereas issuance of a Clinical Trial Status constitutes permission to sell the device to designated clinical investigators *only*.

Manufacturer: Anchor Implant Ltd.
Device: Anchor Dental Implant System
Clinical Trial Status granted until September 1989.

Device: Anchor 1 Hydroxyapatite Coated Dental Implant
Clinical Trial Status granted until June 1989.

Manufacturer: Bone Anchorage Systems Inc.
Device: Dental Implant-Self Tapping Screw
Clinical Trial Status granted until July 1990.

Manufacturer: Calcitek Inc.
Device: Calcitite RM
Notice of Compliance issued November 27, 1984.

Manufacturer: Collagen Corporation
Device: Osseodent Dental Implant
Clinical Trial Status granted until August 1989.

Manufacturer: Core-Vent Corporation
Device: Core-Vent Implants (non-sterile)
Core-Vent Implants (sterile)
Micro-Vent Implants (sterile)
Micro-Vent (Hydroxyapatite Coated) Implants
Screw-Vent Implants (sterile)
Swede-Vent Implants (sterile)
— Included are various attachment systems.
Notices of Compliance issued March 31, 1988.

Device: Sub-Vent Implants (sterile)
Clinical Trial Status granted until April 1989.

Manufacturer: Denar Corporation
Device: Steri-Oss Implant System
Clinical Trial Status granted until November 30, 1989.

Manufacturer: Interpore International Inc.
Device: Interpore IMZ Implant System (Mechanical Attachment)
Notices of Compliance issued January 6, 1987.

Device: Interpore 200: Sterile Granules Alveolar Ridge Augmentation
Anterior Curve
Posterior Block
Unshaped Block
Alveolar Ridge Maintenance
Granules for Repair of Periodontal Defects
Rectangular Wedge
Pyramidal Wedge
Crescent Wedge
Notices of Compliance issued March 8, 1985.

Device: IP200 Malar Onlay
IP200 C-F Rectangle
IP200 C-F Curve 90R
IP200 C-F Curve 45R
IP200 Granules
IP200 Rectangle
IP500 Square
IP500 Rectangle
Notices of Compliance issued February 28, 1986.

Manufacturer: Nobelpharma Canada Inc.
Device: Biotes Osseointegration Dental Implant System
Notices of Compliance issued October 30, 1986 (non-Sterile), and June 30, 1987 (sterile).

Manufacturer: Orthomatrix Inc.
Device: Hydroxyapatite Models HA-1000 and HA-500.
Notices of Compliance issued October 15, 1985.

Manufacturer: Sterling Drug Inc. (Cook-Waite Laboratories Inc. Division)
Device: Alveograf — Alveolar Ridge Bone Grafting Implant Material
Notice of Compliance issued March 8, 1985.

Device: Periograph (Durapatite Particulate 40-60 Mesh) Implant
Notice of Compliance issued July 11, 1988. Δ

OSSEOINTEGRATED IMPLANTS:

Five systems

Editor's Note: Following are abstracts of presentations on Bränemark, Core-Vent, IMZ and Integral Systems, as presented in "Symposium 88: Clinical Applications of Osseointegrated Implants", in Toronto, Ontario, on October 28-29, 1988. Dr. Bergman's abstract accompanied his presentation at the "Pacific Implant Symposium" in Vancouver, February 3-4, 1989.

Implants Today and the Anchor Implant System

by *Harold R. Bergman, DDS, Dipl OS+A, MSc (Path), MRCD(C)*

Implant technology is still such a new field that the changes which have occurred in this field over the forty years since its introduction have brought their impact to bear in every dental office in the Western world. Implants have either stirred deep controversy, or been viewed as the ultimate answer to the dental problems faced by a population which is aging by more than 20 per cent per year.

The number of implants being placed grew four-fold from 1983 to 1987; and the number of practitioners increased ten-fold in the same period. "It's definitely a growing field," said Carl Misch, DDS, director of the Misch Implant Institute in Dearborn, Michigan.

In an interview with AGD Impact, he stated: "Every advanced restorative practice in this country that uses fixed or removable prostheses will need to use implants on some of their patients."

To give you an overview of the field today, we have included three charts: The Number of Implants Placed; the Income from Implants; and the Number of Dentists Involved with Implants.

Here is a quick and impressive indicator of just how much growth is occurring in this field.

Huge strides have been made in the surgical protocol, bio-interfaces, and prosthetic procedures in the last ten years. However, less than four per cent

of North American dentists regularly place implants, a paltry fraction by any yardstick.¹⁻⁷

There is absolutely no reason why every dentist should not include implants in their repertoire, nor why patients should be denied this choice of treatment.

Anchor Implant Systems Inc. has been a leader in the field of implants. With nearly three decades of experience in oral surgery and working with implants, its developer, Dr. Harold Bergman, brings to the field an in-depth knowledge of both the practical and innovative aspects of implants. His unique design has proved itself in hundreds of patients, and it places Anchor Implants at the forefront of current technology.

He has developed simple, progressive surgical protocols that enable the dentist to adopt implantology at their own pace and "comfort level," and progress to the more complex cases with ease and confidence.

Advantages of the Anchor System

Atraumatic shape

Anchor Implants have a cylindrical shape with parallel walls and rounded ends. This shape has been shown to be much less traumatic to bone during surgical placement than implants with external threads. Only a simple drill hole is needed

to form the space in the bone to accommodate the Anchor implant. No tapping or threading is required.

External threads on screw type implants compress bone and cause bone dieback, commonly seen around the cervix of the implant. The Swedish studies even state that a 1.8 mm. scalloping of bone is seen with the Bränemark implant after one year. Bone dieback appears even more severe with the externally threaded Core Vent implants.

Wide choice of sizes

The Anchor Implant is available in 3 mm. and 4 mm. diameters. Both sizes come in 8, 10, 13 and 15 mm. lengths, giving the practitioner a complete range of sizes for every situation.

Hydroxylapatite surface

All Anchor Implants are machined from C.P. Titanium or 6/4 Titanium alloy metal, and coated with a 65 micron layer of dense hydroxylapatite. The HA coatings are applied by Bio-Interfaces Inc. in San Diego, California. Its principal, Dr. John Kay, is known as one of the world's foremost authorities on hydroxylapatite and hydroxylapatite coatings. HA initially bonds to bone through a biochemical bond, as well as a biomechanical bond. This gives an immediate fixation of

the implant to the bone, eliminating the need for external threads on the implant.

HA induces bone to grow on its surface. This means that bone, as it heals, grows not only from the bone surface, but also from the implant surface. This allows the space between the implant and the bone to close twice as quickly, compared to bone and titanium.⁸⁻¹⁸

Atraumatic surgery

Placement of the Anchor Implant requires as little as one drill hole to form the shape in the bone. Anchor has developed a step-by-step graduated series of surgical techniques, from simple to more advanced, taking the beginner gradually into the more complicated cases. Anchor has modified traditional surgical techniques to simplify them and make them less traumatic for the patient.

Universal thread size

The 4 mm. diameter Anchor Implants feature a 2.5 mm. internal thread size that accepts all Anchor connectors, as well as those offered by Integral, Sterioss and VentPlant. This gives the restoring dentist a choice of more than 20 different prosthetic options.

Quality assurance program

Anchor keeps a record of every implant sold and placed. By so doing, Anchor Implant Systems Inc. can tabulate the results to provide a clinical study on the Anchor Implant and a personal study for each participating dentist.

Anchor Implant Systems Inc. will also provide the user with an individual performance report and personal clinical study. To date, Anchor Implants have been proven to be 99.43 per cent successful.

Canadian made

Canadian manufacturers enjoy a worldwide reputation for quality of manufacture. Because of the rate of exchange, the Canadian-made implant is less expensive than similar products from the United States.

Government approval

The Anchor Implant is one of only four systems with Canadian Department of Health and Welfare approvals for sale in Canada. This assures CDSPI protection when you use the Anchor system.

It is time to dispel the mysticism that, in the main, is only a marketing tool, and to establish costs that will dramatically broaden the market for implants and help the dentist augment an ever-diminishing income with a worthwhile, efficacious choice of treatment. △

Dr. Bergman, a graduate of the University of Toronto, is the inventor and developer of Anchor I and Anchor II implant systems. From 1959 to 1962 he conducted a private general dentistry practice in Peterborough, Ontario. He then practised oral surgery in Toronto, 1965-1970. From 1970 to 1986 he practised in the specialty of oral surgery and began an implant practice. From 1986 to the present he has conducted an exclusively implant practice. Since 1962 he has been a lecturer in Implantology.

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The Bränemark System

William R. Laney, DMD

In 1969, Bränemark described the osseointegration phenomenon which provides for a firm, intimate, and lasting connection between a tooth root analogue, the implant, and vital host bone.¹ Shortly thereafter, the tissue integrated prosthesis concept utilizing the method of osseointegration was introduced internationally. In 1981 Bränemark and colleagues reported long term results of clinical treatment for edentulous patients utilizing osseointegrated titanium fixtures.² These and later multicenter reports represent the first substantive data to scientifically justify the use of any oral implant system.³

The Bränemark system offers the potential for life-long integration and is both predictable and versatile for restorative application based upon the following:

1. A demonstrated material biocompatibility (commercially pure titanium);

2. An implant geometric design which provides immediate stabilization and increased a real alloplastic-bone surface interface (threaded cylinder of various lengths and diameter);
3. An implant surface which is specially prepared to enhance biologic attachment;
4. Use *only* of a host implant bed which has adequate bone quantity and quality and healthy soft tissues;
5. Utilization of a prescribed atraumatic surgical technique for implant placement under sterile conditions; and,
6. Provision for the wide distribution of functional occlusal stress incorporating damping features in prosthesis design.

The Bränemark System is generally indicated for use in edentulous and partially edentulous patients, those who

cannot psychologically tolerate removable prosthetic restorations, and others who have acquired congenital oral and/or para-oral structural defects. Currently under investigation is the application of bone-anchored support for facial restorations. To meet the requirements of a wide variety of patient situations, Brånemark fixtures are available in 3.75 and 4.0 millimeter diameters. Lengths of the standard threaded cylindrical fixtures are 7, 10, 13, 15, 18, and 20 millimeters. An alternative design particularly useful in the maxilla provides self-tapping features. These 3.75 millimeter diameter fixtures are available in 10, 13, 15, and 18 millimeter lengths. A second self-tapping fixture is conical in shape and is also made in 10, 13, 15, and 18 millimeter lengths. In addition to the implants themselves, an extensive armamentarium of instruments and equipment is available to satisfy the surgical and prosthodontic procedural demands of the system.

Patient Evaluation and Selection

At some time in the examination and diagnostic phase of treatment, procedures or records deemed essential to establish a basis for the selection of patients for definitive treatment must be performed. These include: consultation, oral and radiographic examination, mounted diagnostic casts, photographs, and consultation with other dental or medical clinicians.

Since not all patients are candidates for implant prostheses, the key to success is patient selection. Evaluation parameters are general and focus attention on strengths and weaknesses of patient condition. With the data gathered from the consultation and preliminary examination, patients are selected for treatment based on the analysis of more stringent criteria. These include:

Edentulous or Partially Edentulous Arch: — a minimum of 7 mm vertical bone height in the anterior edentulous mandible between the mental foramina is necessary for fixture placement. Badly resorbed maxillary ridges may require bone grafting to include fixture implantation. Compromised bone quality and quantity in the upper jaw can preclude the use of fixed prostheses and mandate the use of overdentures using both fixed and removable components.

Of special concern in the partially edentulous mouth are the location, size and shape of the edentulous areas, plane of occlusion, opposing occlusion, and status of the adjacent teeth.

Previous Denture Experience — at least one year is advisable to complete bone healing following extractions and/or determine patient response to the use of conventional oral prostheses.

Opposing Occlusion — the loading of osseointegrated fixtures is predicated upon the type of dentition and occlusal scheme provided by the opposing arch. In the opposite jaw, if not edentulous, treatment of the remaining teeth should include the elimination of caries, periodontal therapy, and the replacement of missing teeth for optimal occlusal plane orientation and appropriate division of the intermaxillary space.

Oral Tissue Health — the implant bed must be free of infectious processes, foreign bodies, and demonstrate completely healed soft and hard tissues.



Systemic and Mental Health — among conditions which definitely preclude implant treatment are those which limit the healing capacity of surgerized tissues, disease processes with poor survival prognosis, therapeutic irradiation administered within the year before treatment, and acute psychiatric disorders to include chemical dependence and alcoholism.

Jaw Relationship — edentulous patients with extreme orthognathic or prognathic jaw relationships are not good candidates for tissue integrated prostheses without adjunctive surgery. Borderline situations should be decided with the presurgical arrangement of teeth on trial bases.

Oral Hygiene — without the commitment to regular and thorough oral hygiene practices, a patient is a poor candidate for tissue-integrated prosthesis.

Clinical Treatment

Patients selected for clinical treatment are managed in two phases. Following diagnostic and treatment planning measures, the first stage of treatment involves fixture placement and the alteration of an existing prosthesis for wear during the postsurgical healing period. For osseointegration to occur, approximately three months of undisturbed healing is required in the anterior mandible and six months in the maxilla and posterior mandible. The surgical site is protected with the use of a resilient denture base lining in edentulous situations and regular follow-up postsurgically.

The second treatment phase involves surgical uncovering of the fixtures, attachment of the transepithelial abutments, and definitive prosthesis fabrication. Following abutment connection, adjacent soft tissue healing is managed with healing caps and surgical packing or revision of the existing prosthesis base with temporary resilient lining material. The prosthetic reconstruction can be initiated immediately. To enhance favorable bone remodeling as the implants are stressed, a moderate program of functional use is recommended over the first three months of service.

Summary

The Brånemark System of dental implants provides a predictable and reliable reconstructive treatment alternative for patients with missing teeth. Laboratory and long-term clinical studies have provided accepted scientific documentation that the procedure is efficacious and applicable to a wide variety of clinical situations. Patient acceptance is evidenced by generally favorable responses citing vastly improved masticatory function and cosmetic improvement. Δ

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The IMZ Implant

Robert J. Chapman, DMD

Introduction

The IMZ Implant System was developed in Germany in the 1970s by Dr. Axel Kirsch.¹ In the development period from 1972 to 1978 various designs, surfaces, insertion methods, and prosthodontic attachments were tried. Basic to all implant designs was an internally threaded plastic insert called an *intermobile element [IME]*, developed as a *shock absorber for occlusal stress reduction*. The final implant design was a titanium plasma sprayed, internally threaded 3.3 mm or 4.0 mm diameter right circular cylinder, 8.0 mm to 15.0 mm long, rounded and perforated at its inferior end by cross slots of 3.0 mm or 3.5 mm by 1.0 mm. The superior 2.0 mm of the implant was highly polished for better plaque control at the bone/implant/soft tissue interface. Both diameters were designed to accept the IME. This configuration has been in use clinically in Europe since 1978 and in North America since 1985. In early 1988 an hydroxyapatite plasma coated implant was introduced into North America after four years of clinical trials in Europe. The design of this implant is identical to the titanium plasma coated implant except it has a 1.0 mm instead of a 2.0 mm polished collar.

Transmucosal Implant Extension [TIE]

The TIE is a highly polished titanium collar machined to five micron tolerances to fit the top of the implant and to extend the implant through the mucosal tissue. It comes in two lengths, 2.0 mm and 4.0 mm, to accommodate varying tissue thicknesses that overlie the implants.

Longitudinal Statistics

The success rate of the titanium plasma coated implant is approximately 95 per cent over a 10 year period; the early success rate of the HA coated implants indicates approximately 98 per cent of these implants remain in place and in function after four years.

In late 1988, the 4.0 mm diameter titanium plasma sprayed implant was given provisional American Dental Association approval for use as an adjunctive abutment for those prosthodontic

situations deemed appropriate by the clinician.

The Intermobile Element [IME]

The feature that makes the IMZ implant unique is the shock absorbing intermobile element made from the viscoelastic plastic, polyoxymethylene [POM]. This material resists deformation exceptionally well. In laboratory experiments conducted by Interpore International, POM IME's were subjected to cyclic loading of 30 pounds at 70 times per minute on an Instron Tensile Testing Machine. After 900,000 continuous cycles, dimensional change did not exceed .0005 inches. This corresponds to 500 days of average occlusal cycles. Moreover, moisture, lubricants, detergents, gasoline, bleach, acetone, acetic acid, calcium hydroxide, copper chloride, and many other elements do not affect the strength of this material more than five per cent.²

The IME is both externally and internally threaded. The external thread allows the IME to be threaded into the body of the implant; the internal thread is to accept the titanium retention screw for the prosthesis. These retention screws are able to move horizontally and laterally within the IME, resulting in the horizontal and vertical stress absorbing capability characteristic of the IMZ implant system. The IME acts as a periodontal ligament analog to reduce impact shock to both the bone/implant interface and to the elements of the implant/prosthetic system. A recent study indicates that the IME reduces force at the occlusal level by approximately one-third.³

Placement of the IMZ Implant

The burs used to make the osteotomy are for the most part water cooled to reduce frictional heat to the bone. *Using high torque and speeds between 1200 and 1500 RPM, the burs are used in sequence from smallest to largest to atraumatically prepare a smooth, parallel sided implant bed.* The implant is carried to the osteotomy with a pre-packaged inserting head. Once placed, it is tapped gently but firmly into the

osteotomy with the implant seating instrument. The insertion head is removed, the titanium primary phase healing screw placed, and the tissue is closed over the implant. One week of healing with no prosthetic coverage is strongly recommended. Any pre-existing prosthesis can then be altered and relined with a tissue conditioning material to carry the patient through the three to six month osseointegration period.

Implants are uncovered using a small envelope incision for one implant, or a larger incision over the site of multiple implants, and the primary phase healing screw is removed. It is then replaced with a POM secondary phase healing screw and TIE. Impression making is accomplished a week or two later, by placing a plastic post into the body of the implant and making an impression of this with any accurate impression material. The post is unscrewed from the implant and placed into an implant analog. This assembly in turn is inserted into the impression and a cast is poured. Conventional techniques for prosthodontic construction are thereafter employed.

Indications

Perio/prostheses, Fixed prostheses

The IME and periodontal ligament depress about the same 10 to 20 microns under a 5 to 10 N load.^{2,4} Thus the IME permits rigid fixation to a natural tooth abutment. (A tube and screw attachment for a connection to a distal abutment and a rigid premanufactured precision attachment to an anterior abutment are strongly recommended.) This provides tremendous adaptability and flexibility in prosthodontic use. Patients suffering with periodontal disease may have the salvageable dentition strengthened by rigidly splinting with implants.

IMZ implants can be used in combination with the natural teeth as pier abutments, distal abutments, or alone as free standing abutments to replace removable partial dentures with fixed prostheses.

Removable Prostheses

The IMZ implant has been used extensively to help stabilize and retain remov-

able dentures. A premanufactured bar and clip assembly and a ball and socket attachment are part of the armamentarium.

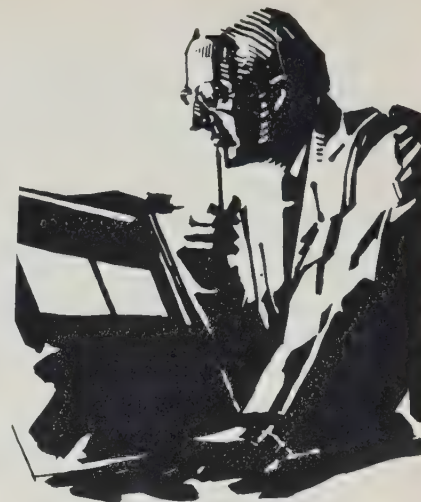
Conclusion

The IMZ implant is easy to place and is excellent for prosthodontic reconstruction. The heart of the implant, the IME, provides shock absorbing capability that mimics that of the natural dentition. Thus the implant can be used alone for free standing prostheses of any description, or attached to the natural dentition as additional abutments for prosthodontic support. Δ

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Integral Implant System

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The Integral implant system is a cylindrical endosseous dental implant. The implant is made of titanium and is coated with a 75 micron layer of hydroxylapatite (HA). It is this hydroxylapatite (HA) surface which differentiates the Integral implant system from other commercially available systems.

Cylindrical titanium implants when surgically placed in an atraumatic manner demonstrate a phenomenon termed "osseointegration". Osseointegration is defined as "The direct contact on the light microscopic level between living bone tissue and the implant".¹ HA coated cylindrical implants give rise to a phenomenon termed "Biointegration". Biointegration describes the chemical as well as mechanical bonding of the bioactive HA surface and bone. This has been shown to occur at both the light and electron microscopic levels. The biomechanical bond has been demonstrated to be stronger^{3,6} and occur earlier^{4,5} in the healing process than that which occurs with a mechanical/adaptation bond.

Another striking difference between the two interfaces occurs at the connective tissue level. Gingival connective tissue fibres abutting titanium, form a cuff around the implant. In the case of HA, connective tissue fibres have been reported to connect directly into an osteoid layer which has been deposited onto the HA surface.² This connective tissue attachment would resist any epithelial downgrowth and also form a "fibre barrier" type defence against breakdown. These fibres have been reported perpendicular to the implant surface. The HA surface is osteophyllic, and it has been shown that bone growth can occur in a coronal direction.² This contrasts with solid screw titanium implants, in which crestal bone loss is often observed. Typically one sees an "infra-bony" type defect at the crest of the bone. In the case of the Bränemark implant system this is intentional as the surgical preparation requires a counter-sinking procedure, which removes crestal cortical bone.

The Integral Implant surgical set-up

consists of a series of burs that are used sequentially to prepare the receptor site. These burs are internally cooled so that overheating of the bone will not occur during the preparation. Each bur is self limiting in a vertical direction, so that once the size of implant is selected the preparation of the receptor site will correspond to the size of the implant. The implant itself is supplied in a cleaned and sterile package that facilitates easy delivery to the receptor site. The Integral Implant is supplied in two diameters, 4.0 mm and 3.2 mm and four lengths, 8 mm, 10 mm, 13 mm and 15 mm.

The Integral Biointegrated Dental Implant System offers the restorative dentist a variety of treatment modalities both for fixed and removable prosthetics. The variety of abutment choices allow the restorative dentist to choose between (1) a fixed prosthesis with permanent cementation. (2) an operator removable prosthesis. (3) a patient removable appliance. This versatility is essential when restoring partially edentulous cases as the implants cannot always be placed parallel to each other. The design of the abutment heads must allow for the restoration of these types of cases.

Once osseointegration has been confirmed and the restorative phase commenced, there are certain advantages to the Integral system. These features are: 1. Straight emergence profile of the abutment through the gingival tissues into the oral cavity. This results in the absence of undercut areas which besides being areas for plaque retention, are areas that can potentially trap setting dental materials. 2. The ability to economically convert an existing unstable tissue supported removable appliance to an implant supported and retained appliance. Various attach-

ments are available which screw into the implant to supply retention. Zest attachments, Jackson magnetic attachments and Shiner magnetic attachments are available for adding such retention.

3. Single tooth replacement is a viable option in treatment planning and the system must provide for its fabrication. In fabricating a single crown supported by an implant it is not necessary to have a screw retained crown but it is preferable to have an abutment that will accept a cemented crown.

4. Fixed bridgework connected to natural teeth often requires fabrication of a restoration which can be cemented to the natural teeth as well as to the implants.

5. Esthetics is an important aspect of

restorative dentistry and with the utilization of implant supported dentistry, sufficient versatility in abutment selection is essential to provide a cosmetic result.

6. Retrievability of the restorative effort is in many clinical situations absolutely essential. In order to have retrievability, the abutments must be threaded into the implant body and the restoration should be retained to the abutment via a screw. This gives the operator the ability to remove the restoration at any time.

The system provides diverse restorative options as well as a sound biologic basis for its use in clinical dentistry. Δ

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The Core-Vent Implant System

by
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Introduction

The Core-Vent implant, a cylindrical, submergible titanium basket, was introduced by Niznick in 1982.¹ This was the first of six different implant designs that currently comprise the Core-Vent System of Osseointegrated Implants in varying lengths and diameters to accommodate narrow or resorbed ridges and circumvent vital structures. This evolution proceeded from the recognition that more than one implant design is necessary to accommodate the various anatomical limitations presented by patients desiring dental implants. In addition, the anatomical, functional and esthetic needs of patients have directed an evolution of prosthetic components to simplify and optimize the restorative results. Each implant in the Core-Vent System requires a submerged healing period and subsequent uncovering to place the transmucosal insert into the implant appropriate for the prosthodontic restoration desired.

Treatment Planning

Decisions about what type of implant to place, in what lengths and diameters they should be, and how many of them are needed depend on two main factors. **First, the quality, quantity and loca-**

tion of the patient's available bone must be considered when selecting the design and dimensions of the implants. In order to maximize the bone to implant surface area, **fitting the implant to the patient, not the patient to the implant, should be the main consideration in making the appropriate selection. Second, the desired prosthodontic application must be considered when determining the quantity of implants to place.** Too many implants can prevent proper fabrication of the desired restoration, while too few implants may preclude the fabrication of some restorations. In these ways, selection of an adequate number of appropriate implants can be made in order to optimally meet the anatomical, functional, and esthetic needs of each patient.

Core-Vent Implants offer a hollow basket cylinder design with three rings of self-tapping threads for immediate fixation. They are available in three diameters, four premodified lengths, and with a hex-hole connection to receive cemented prosthetic abutments, or with a hex-thread connection to receive removable abutments. **Research shows the Core-Vent implant has a 98 per cent**

success rate in the maxilla in partially edentulous cases.²

Screw-Vent Implants offer a threaded cylinder design. Literature shows excellent results with this implant design in the symphysis of the mandible.³ Horizontal and vertical vents located at the apical ends provide a mechanical lock after osseointegration. The self-tapping Screw-Vent is 3.75 mm in diameter, comes in four lengths, and is available with hex-hole or hex-thread abutment connections. Its top consists of a smooth collar which provides an intimate crestal bone seal without countersinking.

Swede-Vent Implants offer a threaded cylinder design similar to the Screw-Vent, but equipped with an external hex pattern. Resembling the Swedish product, the implants can be placed using the same surgical protocol and instrumentation as theirs, or with the simplified instrumentation of the Core-Vent System. The Swede-Vent is available in two diameters, 3.75 mm and 4.0 mm, and each diameter is available in five different lengths.

Micro-Vent Implants are coated with hydroxylapatite and offer a fluted cylinder design with a tap-in, screw-in surgical protocol. A double ring of self-tapping

threads at the apical end provides immediate fixation. Apical vents and vertical anti-rotational grooves provide a mechanical lock when the implant osseointegrates, and a smooth collar at its top provides an intimate crestal bone seal. Its development arose out of the need for a small diameter implant for thin alveolar ridges. The implants are available in diameters of 3.25 mm and 4.25 mm, and each is offered in four lengths with hex-hole or hex-thread connections.

Bio-Vent Implants, offer a smooth cylinder design with a plasma-sprayed hydroxylapatite coating. The body of the implant is equipped with vertical anti-rotational grooves, and apical vents. Its vented bottom reduces problems of hydrostatic build-up when the implant is placed by allowing blood in the surgical site to escape up it, thus facilitating seating. The Bio-Vent is offered in a 3.5 mm diameter with a hex-thread connection, and is available in four lengths.

SUB-Vent Implants offer a tapered vented blade design for resorbed ridges where there is not enough bone present to place a cylindrical implant. The blades are available in three lengths of 18 mm, 26 mm and 34 mm, and two shoulder widths of 1.2 mm (tapering to 1.0 mm at the base), and 2.4 mm (tapering to 2.2 mm at the base).

Prosthetic applications

The Core-Vent System offers a large, versatile selection of prosthetic abutments designed to achieve the maximum esthetic and functional results. The same array of abutments for hex-hole implants is available for hex-thread implants. Prefabricated abutments are available which shorten chair time and laboratory expense. Thermo-plastic castable abutments overcome problems of parallelism and esthetics when the angle of the implant is not ideal. Brass analogs provide simplified transfer procedures for fabrication of a working model using the indirect technique.

Fixed Crown and Bridge Abutments: Two abutments in titanium and plastic are available for fixed crown and bridge restorations. Titanium Coping inserts are prefabricated abutments primarily used in the mandible, where implant placement is usually straight enough to allow an emergence of the abutment parallel with existing dentition and in alignment with the opposing arch. The insert can be prepared outside the mouth to receive the final restoration. After cementation with a composite cement, or threading-in of the abutment, subgingival margins can

be established, if desired. The restorative doctor then follows conventional procedures for fabrication of fixed prosthetics as if working with a natural tooth.

Plastic Coping inserts which serve as bendable, castable post and core patterns are available for situations where the angulation of the implant would preclude the use of a prefabricated abutment. Such conditions are usually present in the maxilla, where the angle of the ridge frequently prohibits an abutment emergence in alignment with that of the adjacent teeth and the opposing arch. When using Plastic Coping inserts, the indirect technique is generally used.



Bar Overdentures and Fixed/Detachable Prostheses: Implant supported prostheses can be fabricated on a variety of inserts. Prefabricated abutments with cylindrical heads are available for rigid, or resilient splinting with a custom tissue bar. In these Bar Overdenture restorations, clips are processed into the denture base, and clip to the bar for support and retention of the prosthesis. The same abutments can be used for prostheses which have denture teeth and acrylic processed directly to the metal. The prosthesis is retained by rigid fixation screws. These Fixed/Detachable restorations can only be removed by the dentist. Inserts with tapered heads are used primarily in the maxillary arch. The taper of the head allows the metal of the abutment to be concealed by the prosthesis for better esthetics.

Tissue Supported Implant Retained Overdentures: Several attachments utilizing snaps or magnets and keepers are available for overdenture stabilization and retention. In the mandibular arch, the Core-Vent Attachments for Core-Vent and 4.25 mm Micro-Vent implants are snap attachments which consist of prefabricated, bendable titanium female [CVA] inserts that cement into the implants. Ball-style Male Components, processed

into the denture, snap into the inserts to retain and stabilize the prosthesis. Two to three Core-Vent Attachments are recommended for the symphysis region. The Titanium Ball Screw [TSB] is a prefabricated threaded Male Component which attaches to a variety of inserts, and can be used with all implants in the Core-Vent System. Female retentive caps, processed into the prosthesis, snap over the ball attachments for retention and stabilization of the prosthesis. A castable version of this abutment can be fabricated using the Plastic Coping insert and the Cap Attachment System when problems of angulation exist.

Summary

The developmental concepts of the Core-Vent System have been shaped by a desire to provide practicing dentists with a **user-friendly system of oral implantology and restorative procedures**. By providing implants in varying diameters, lengths and designs with a simplified surgical protocol, a true system of fitting the implant to the patient, not the patient to the implant, has evolved to meet the clinical needs of both dentist and patient. Standardized prosthetics enable similar restorations to be performed on all implants in the system. Bendable titanium inserts and castable abutments allow the optimum achievement of esthetics, regardless of the angle of implant placement. Δ

Jay R. Friedman, DDS

Dr. Jay Friedman received his DDS at the State University of New York at Buffalo, and completed a Certificate in Prosthodontics from the University of Southern California. He has lectured throughout North America on implant prosthodontics. Dr. Friedman is a member of the American College of Prosthodontics and a clinical instructor in the Department of Restorative Dentistry at the University of Southern California. He maintains a private practice limited to prosthodontics in Encino, California.

Gary R. O'Brien, DDS

Dr. Gary O'Brien received his DDS with honors from the University of Southern California, School of Dentistry, and was the recipient of nine letters and awards of commendation. He now teaches in the Department of Prosthodontics and Operative Dentistry at USC, and maintains a private practice in Glendale, California. Dr. O'Brien has been involved with implant research since 1977.

References

1. Niznick, G.A.: Endosseous Dental Implant System for Overdenture, Crown and Bridge support. United States Patent #4,431,416 filed April 29, 1982.
2. Patrick, D.R.: Core-Vent 5-Year Clinical Study, Presented at the Core-Vent Symposium, Dallas, TX, May, 1988.
3. Bränemark, P.I., et al.: Long-term Treatment Results, Bränemark, P.I., Zarb, G., Albrektsson, T. (eds), *Tissue Integrated Prostheses*, Chicago, Quintessence Publishing Co, 1985, pp. 175-186.



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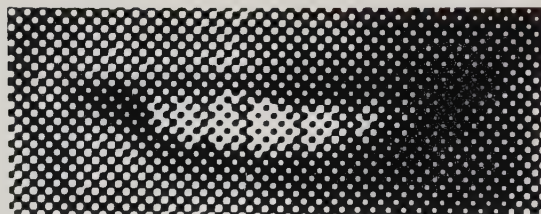
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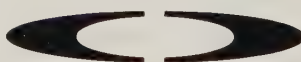
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Announcements

July/Juillet 1989

July 14-19: Academy of General Dentistry in New York. Contact: Ms. Debbie Jepsen, 211 E Chicago Ave, Suite 1200 Chicago, ILL 60611, USA.

August/Août 1989

August 5-10: The World Congress on Health in The Great Hall of the People, Beijing, People's Republic of China. For more information, contact: The World Congress on Health, Dwight D. Eisenhower Bldg, Spokane, WA 99202, USA. (509) 534-0430.

August 9-13: Dental Manufacturers of America, Inc. Contact: Ms Kathleen A. LeMar, 1118 Land Title Bldg, Philadelphia, PA 19110, USA.

August 10-13: American Academy of Esthetic Dentistry in Pebble Beach, CA. Contact: Ms. Cheryl Kraus, 211 Chicago Ave, Suite 948, Chicago, ILL 60611, USA.

August 18-20: 5th Annual Symposium, ACOI: Implant Surgery and Prosthodontics in Oakland, California. Information: Margaret M. Jackson, International Congress of Oral Implantologists, PO Box 2277, Grand Central Station, New York, NY 10163, USA. (201) 783-6300.

August 20-24: Ethics, Justice and Commerce in Transplantation: A Global View in Ottawa, Ontario. For more information, please write: Ethics, Justice and Commerce in Transplantation, 2nd fl, 185 Rideau St, Ottawa, Ont K1N 5X8.

August 20-25: 122nd Annual Meeting of the Canadian Medical Association in Quebec City. For more information, contact: CMA Meetings Department, P.O. Box 8650, Ottawa, Ontario, K1G 0G8.

August 21-25: 18th North Queensland Dental Convention in Cairns, Australia. For details, contact: Dr. Peter Martin, Director, 18th North Queensland Dental Convention, PO Box 388, Cairns 4870, Australia.

August 26-30: 25th Class Reunion University of Manitoba Class of '64 in Vancouver during CDA Convention. Contact: Dr. Ken Neuman (604) 736-7371.

August 27-30: Canadian Dental Association Convention in Vancouver, British Columbia. For more information, contact: Miss Leila Chatterjee, Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6 Tel: (613) 523-1770.

August 28-30: International Conference on Blood-borne Infections in the Workplace in Stockholm, Sweden. Sponsored by WHO, ILO and NIH (USA). Abstracts invited — deadline March 31. Contact: CONGREX AB, PO Box 5619, S-114 86 Stockholm, Sweden, ATTN: Catharina Oström.

September/Septembre 1989

September: New Zealand Dental Association Convention in Napier, New Zealand. Contact: Dr. DG Arnott, 30 Munro St, Napier, New Zealand.

September: 27th Annual Convention of Iranian Dental Association and 7th International Dental

Exhibition in Tehran. Contact: Dr. Ezatollah Khamessi, Iranian Dental Association International Section, PO Box 14155-3695, IR-Tehran 14, Iran.

September 2-8: 77th Annual World Dental Congress, FDI, in Amsterdam, The Netherlands. Congress Secretariat, c/o Organisatie Bureau Amsterdam bv, Europaplein 12, 1078 GZ Amsterdam, The Netherlands. (31) 20-5491212.

September 14-17: Joint CAOMS-CAO Conference at the Hotel Bonaventure in Montreal. Inquiries: Dr. Daniel Forget, 1575 Henri-Bourassa West, Room 410, Montreal, Que H3M 3A9.

September 21-23: 41st Annual New Orleans Dental Conference What's Cookin' in '89. For more information, call or write: Ms. Norma Ward, New Orleans Dental Conference, Suite 119, 3101 W. Napoleon Ave, Metairie, LA 70001, USA. (504) 834-6449.

September 21-23: 28th Annual Meeting and Scientific Session of the Canadian Academy of Prosthodontics in Montreal. Contact: Dr. Alan R. Mills, Faculty of Dentistry, The University of Western Ontario, London, Ont N6A 5C1.

September 22-24: 25th Annual Session of the Canadian Academy of Endodontics in Montreal. For more information contact: Wayne Acheson, Suite 301, 400 St Mary Ave, Winnipeg, Manitoba R3C 4K5.

October/Octobre 1989

October 5-8: IX National Dental Congress of Asocacion Odontologica Dominicana in Santo Domingo. Contact: IX Congreso Nacional de Odontologica, Apartado Postal 1002, Santo Domingo, Dominican Republic.

October 5-8: Annual Meeting of the International Association for Orthodontics and the American Orthodontic Society in Montreal. For details, contact: IAO Headquarters, 211 E Chicago Ave, Suite 915, Chicago, IL 60611. (312) 642-2602.

October 11-15: American Academy of Implant Dentistry in Scottsdale. Contact: Mr. John P. Wieniewicz, PO Box 2002, Abington, MA 02351, USA.

October 24-27: American College of Prosthodontists in Tuscon. Contact: Ms. Linda Wallenborn, 1777 NE Loop 410, Suite 904, San Antonio, TX 78217, USA.

October 24-27: 3rd International Medical, Hospital and Dental Equipment and Facilities Exhibition in Bangkok, Thailand. Contact: Elsa Wong, SHK International Services Ltd, 22/f National Mutual Centre, 151 Gloucester Rd, Hong Kong, 89587 SHKIS HX.

October 25-28: American Academy of Periodontology in Washington, DC. Contact: Ms. Jean Pierson, 211 Chicago Ave, Suite 1400, Chicago, ILL 60611, USA.

October 27-28: International Congress for Oral Implantologists in New York. Contact: Ms. Margaret Jackson, 248 Lorraine Ave, 3rd floor, Upper Montclair, NJ 07043, USA.

October 27-31: American Institute of Oral Biology in Palm Springs. Contact: Dr. Philip Boyne, Dept of Surgery, School of Dentistry, Room 3306, 24777 University St, Loma Linda, CA 92350, USA.

October 30–November 1: American Academy of Maxillofacial Prosthetics in Tuscon. Contact: Dr. Gregory Parr, MCG/School of Dentistry, Dept of Prosthodontics, August, GA 30912, USA.

October 30–November 3: American Dental Trade Association in Maui, Hawaii. Contact: Mr. Nikolaj Petrovic, ADAT, 4222 King St, Alexandria, VA 22302, USA.

October 30–November 3: 107th Annual Meeting of the American Dental Trade Association in Maui, Hawaii. Contact: Nikolaj M. Petrovic, CAE President & Chief Executive Officer, American Dental Trade Association, 4222 King St, Alexandria, VA 22303 USA.

October 30–November 5: International College of Dentists in Honolulu, Hawaii. Contact: Dr. Richard Schaffer, One Metro, 51 Munroe St, Suite 1501, Rockville, MD 20850, USA.

November/Novembre 1989

November 1-3: 52nd Annual Meeting of the American Association of Public Health Dentistry in Honolulu, Hawaii. Contact: AAPHD, National Office, 10619 Jousting Lane, Richmond, VA 23235, USA.

November 3: American Association of Dental Consultants in Honolulu, Hawaii. Contact: Dr. Alan Helerstein, 919 Deer Park Ave, North Babylon, NY 11703, USA.

November 3: American Endodontic Society in Honolulu, Hawaii. Contact: Dr. Alvin H. Arzin, 2 Learning Lane, Levittown, PA 19054, USA.

November 4-7: 130th Annual Session of the American Dental Association in Honolulu, Hawaii. Contact: Office of International Affairs, American Dental Association, 211 E Chicago Ave, Chicago 60611 USA.

November 5-8: American Academy of Dental Radiology Contact: Capt. Tom McDavid, OASD Health Affairs, Pentagon Room 3D372, Washington, DC 20301-1200, USA.

November 8-12: American Society of Dentistry for Children in San Diego, CA. Contact: Ms. Carol A. Teuscher, 211 E Chicago Ave, Suite 1430, Chicago, Ill 60611, USA.

November 15-18: VI Congreso Internacional de Estomatologia y X Congreso Nacional de Odontologia in Lima, Peru. Contact: Dr. Ramon Castillo, President de los Congresos, Alfredo Salazar 583, Of. 102, San Isidro, Lima, Peru.

November 30: Toronto Academy of Dentistry — 52nd Annual Winter Clinic at the Metro Toronto Convention Centre. For information, contact the Academy of Dentistry at (416) 967-5649.

December/Décembre 1989

December 27-30: 44th Indian Dental Conference in Calcutta. For details write: Dr. K.L. Banerjee, Conference Secretariat, Dr. R. Ahmed Dental College & Hospital, 114, Acharya, J.C. Bose Rd, Calcutta — 700 014 India.

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The Journal of the Canadian Dental Association welcomes the submission of previously unpublished articles, critical reviews of material on advances in dentistry and clinical reports for consideration for publication. Material is accepted for publication on the understanding that it is submitted solely to the Journal and that it has not previously been submitted elsewhere.

Scientific Articles:

are contributions dealing with research, diagnosis and treatment of dental disease, studies in education, clinical and laboratory research and other detailed investigations pertinent to dentistry and related fields. The text should not exceed 3,000 to 4,000 words (approximately four Journal pages).

Clinical Reports:

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Opinions:

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1. Hechter, F.J., Symmetry and dental arch form of orthodontically treated patients. *JCDA* 44:173-184, 1978.

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2. Kilpatrick, H.C. *Work simplification in dentistry*, ed. 2, Philadelphia, Saunders, 1964.

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The Future Is Here. . . Only After the Present. . .

As a member of the CDA, I wish to express my concern after reading the opinion of Dr. Bernard Dolansky in his article, "The Future Is Here," on a proposal to establish a CDA Third Party claim forms processing centre (electronic data interchange or EDI).

I assure readers that the following comments are in no way intended to discredit the efforts pursued by this distinguished executive member of the CDA, but I do hope that this response will be of some value in the decision-making process concerning the subject at hand.

But, what's this about eliminating the paper claim form? *I do not agree* that any new important policy or mechanism affecting the administration of private dental clinics in Canada be formulated and even less implemented by the CDA without a national survey on the subject. Indeed, what is the opinion of the majority of dentists in Canada regarding Third Party assignments of benefits including insurance plans and other coverage plans such as Department of Veterans' Affairs, Indian Affairs, Welfare, etc. . . , and what is the actual number of Canadian dentists who participate in the assignment of benefits directly to the dentist? . . . and how many more would prefer to participate if given the option?

Do the majority of dentists, CDA members especially, feel the need for the establishment of such a proposed insurance claim clearing house by the CDA? How do the dentists feel about profiling by their association in the province where such a procedure exists, as stated by Dr. Dolansky. If such information and opinions are currently available to the CDA, it would certainly be important to publish them for review by CDA members prior to giving informed consent to such a radical change in the administration of our clinics and collection of fees from insurance patients.

I agree that the information received in such a proposed system could serve as a useful tool for the national and provincial association to evaluate practice changes and trends, but only in a degree relative to actual claim processing, as many patients do not have insurance dental coverage.

For a better dialogue and better understanding of the proposal as indicated by Dr. Dolansky, questions such as the following should be answered in an open forum for the benefits of CDA members who would be affected by such changes:

1. Will CDA members be given the right to review and vote on a final proposal prior to voting by the executive?
2. If after due consultation with CDA members, a vote in favour of such a project is taken, would it be enforced on all members of the CDA?
3. How would such a proposal affect Canadian practicing dentists, non-members of the CDA?
4. At what cost and who would pay for the installation and servicing of the required office terminal?
5. Who would be responsible for loss of income in cases of loss of claims by the CDA?
6. Of great importance — how can claim administration be made more cost effective than now by yet another intermediate level of control and distribution of claims?

Indeed EDI may have some value in the future, however it does not, in my view, have to happen if it does not meet with the approval of the majority of Canadian dentists involved with third party payment in their clinics. For the majority of dentists to benefit from such an initiative by the CDA Third Party Dental Plans Committee, I propose that a general survey be made *prior* to making the future happen now.

*J. Jean Gauthier, DDS
Newcastle, N.B.*

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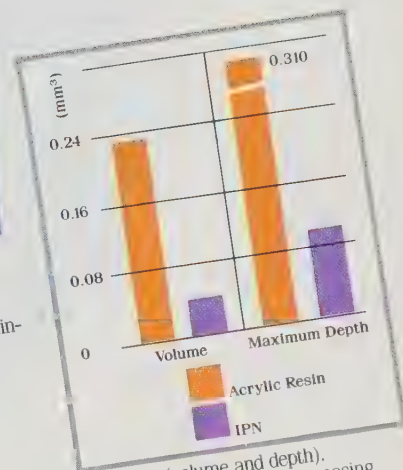


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